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FUNCTION OF THE SECTION ON OPHTHALMOLOGY

Chairman's Address

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The function of the Section on Ophthalmology of the American Medical Association differs from that of any other society in America. An effort will be made to demonstrate wherein this difference lies. This organization not only should offer an opportunity for the presentation of scientific programs but also should give ophthalmology a place where its various problems may be discussed and analyzed and where suggestions may be made for their proper solution.

In order to show that this is so, some historical background is desirable. I shall therefore give a brief résumé of the principal events in this evolution.

Ophthalmology was first recognized by the American Medical Association as a distinct specialty in 1863. It is natural that it had not been so recognized previously, when one stops to consider the limited knowledge concerning diseases and treatment of the eye at that time. Such knowledge was in many respects in a rudimentary condition when the American Medical Association was first organized, as was pointed out by Dr. Verhoeff [1] in his address to this section two years ago. The ophthalmoscope had not yet been developed. Perimetry was unknown. The knowledge of refraction was meager; its actual practice was carried out by laymen. General anesthesia was just coming into use, and local anesthesia was unknown. As a consequence, surgery of the eye was almost in its primordial state. Discission and extraction of cataract, enucleation and the making of an artificial pupil, according to Dr. Verhoeff, were the only intraocular operations being performed. Medication or surgery for increased intraocular tension had yet to be evolved. Imagine daring to practice ophthalmology without knowledge of any means for relieving the agony of acute glaucoma! Is it strange that this branch of medicine should have been avoided and that only a daring few ventured into it? Among them were Edward Delafield, the first president of the American Ophthalmological Society, Isaac Hays and Samuel D. Gross, who were also active in the early days of the American Medical Association. Practically no one gave more than part time to the specialty. Exceptions to this rule were Elkanah Williams of Cincinnati, who in 1860 was made professor of diseases of the eye in the Miami Medical College, and the brilliant Henry W. Williams, who was appointed to the first Chair of Ophthalmology at Harvard Medical School in 1871.

At the present time, there are three major ophthalmologic societies in the United States and two ophthalmic sections of organizations including other branches of medicine. The American Ophthalmological Society was the first of these major organizations. It was founded in 1864, when eighteen men gathered at the New York Eye Infirmary for the first official meeting. This society may be considered the senior of the group, not only because of its early inception, but also because of its age requirements. At least ten years in practice is necessary before a candidate may be considered for admission. An impeccable record of ethical conduct has always been of primary importance. Dr. Verhoeff has truly pointed out that, in his opinion, its major contribution has been its insistence on the highest ethical standards as essential for admission. He stated, "Membership in the society has therefore been a laudable ambition for the young and a gratifying reward for the older ophthalmologist." In the maintenance of such standards there have, no doubt, been occasional injustices; nevertheless the ideals of the best in ophthalmology have been held to a much higher plane than would otherwise have been true. Scientifically, its programs are of outstanding quality. In the beginning it gave needed support to the American Board of Ophthalmology, making certification by that Board an essential for membership.

In 1896 the American Academy of Ophthalmology and Otolaryngology came into being. (It was called the Western Ophthalmic and Otolaryngologic Society until 1903.) Its original intent was to supply a forum where men interested in both specialties might be heard. As the constitution puts the matter, "The object of this Academy shall be to promote and advance the science and art of medicine appertaining to the eye, ear, nose and throat; and to encourage the study of the relationship of these specialties to surgery, general medicine and hygiene."

The prime requisite for membership is good standing in the county, state or national medical society; the certificate of the American Board of Ophthalmology, Otolaryngology or Plastic Surgery is also essential. Instruction courses of the Academy, given during the annual meetings, and the Home Study courses have fostered the original ideas of this splendid organization. These courses to members, and also to aspirants for membership, give evidence not only that high standards have been set, but that excellent measures for achieving such standards have been provided.

The junior member of the group was organized in 1929, under the name of the Association for Research

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1. Verhoeff, F. H.: American Ophthalmology During the Past Century, Tr. Sect. Ophth., A. M. A., 1947, p. 35.

in Ophthalmology. The two day meeting in Chicago in 1948, repeated again in June 1949 in Philadelphia, gives evidence of the rapid growth of this association into the full stature of another important national organization. Its unique distinction lies in its appeal to the younger research workers. Often, men who devote part time or full time to this field appear on its program. It admits to membership not only those lacking certification by the National Board but also those interested in allied fields of research, who may not even hold the medical degree.

The Section on Ophthalmology of the American College of Surgeons approaches the needs of the specialty from a somewhat different angle. The interesting meetings of this organization are worthy of better attendance than they have been receiving. These meetings take the form, to a considerable extent, of symposiums and round table discussions on pertinent subjects both supported by a wealth of surgical clinics and demonstrations. Eligibility for membership in the college is dependent on satisfying the requirements of its own admitting machinery, irrespective of standing with the various specialty boards.

The Section on Ophthalmology of the American Medical Association is the remaining member of this group. Its development has been so merged with that of the parent organization that a brief review of the antecedents of both appear to be in order. Turning, therefore, to the events leading to the establishment of the American Medical Association, one is at once confronted with the dominating personality of Nathan Smith Davis, a country doctor of upper New York State. In the history of the Association recently published by Dr. Fishbein,[2] the first essay is a brief biography of the remarkable Dr. Davis. It may be said that through his untiring efforts and his ability to interest others, the American Medical Association was brought into being.

The deplorable state of medical education and licensing in the United States had become a matter of great concern to the better elements in medicine. To correct this evil, a number of previous attempts had been made to formulate a national society. However, local jealousies had rendered all attempts of no avail, until this indomitable man stepped into the picture. Through his driving force differences were set aside and suspicions were allayed; eventually the first meeting was convened at Philadelphia in 1847.

During the seventeen years previous to this time, the number of medical schools in the country had doubled. In an active rivalry for students and the fees paid by them, the course of instruction in all was being constantly reduced in length and over-all requirements. In addition to this reprehensible state of affairs, a still greater evil existed. In most states these same schools were empowered to grant the license to practice. Such was the situation that really forced the formation of a national organization.

At first the physicians of Philadelphia and Boston, suspicious of the altruism of their New York confrères, refused to participate. But eventually those of Philadelphia appointed twelve eminent physicians to attend the organizational meeting in New York on Tuesday, May 5, 1846, in the hall of the Medical Department of New York University. Dr. Edward Delafield was chairman, presiding during the election of officers. He was later made one of the vice presidents.

2. Fishbein, M. F.: History of the American Medical Association, Philadelphia, W. B. Saunders Company, 1947.

After the election of officers, the first business was that concerning medical education. A committee of nine men was appointed, headed by Dr. Davis. The following day this committee presented four proposals:

First: That it is expedient for the medical profession of the United States to institute a National Medical Organization.

Second: That it is desirable that a uniform and elevated standard of requirements for the degree of M.D. should be adopted by all the medical schools in the United States.

Third: That it is desirable that young men, before being received as students of medicine, should have acquired a suitable preliminary education.

Fourth: That it is expedient that the medical profession in the United States should be governed by one code of ethics.

Dr. Davis also tried to introduce, and did receive support for, a resolution to the effect that the union of the business of teaching and licensing in the same hands is wrong in principle and liable to abuse in practice. Thus it can be seen that the necessity for establishing uniformity and high standards gave birth to the American Medical Association and that difficulties and problems are nothing new to the organization.

The first request for an Eye, Ear, Nose and Throat Section came at the annual meeting in 1877, when it was proposed that such a section be formed. In 1878 Dr. X. C. Scott of Ohio again presented the proposal, and it was adopted. Thus, the section came into being and had its first meeting as such in 1879, with about a dozen members. Dr. Bolling A. Pope of New Orleans was chairman and Dr. Eugene Smith of Detroit was secretary. In 1888 ophthalmology was granted a section separate from that of otolaryngology. But not until 1891 did this or any other section publish transactions. Previous to that time, all activities had been recorded in the publications of the general society.

The meeting that year was presided over by Leartus Connor of Detroit, a man of remarkable vision. Dr. Connor's address is of great interest even to this day. The first business of the meeting was the appointment of a committee of three to report on what action should be taken with regard to the suggestions which the address contained. Drs. George E. Frothingham, Edward Jackson and Leartus Connor made up the membership of the committee. They reported favorably on all the suggestions, some of which are worthy of repetition.

The first suggestion was the republication of all business and scientific proceedings in a special volume to be distributed annually and to be known as the "Transactions of the Section on Ophthalmology of the American Medical Association." The initial volume of the Transactions was the outcome of this report.

The second suggestion adopted was that a list of all those members of the American Medical Association who were interested in ophthalmology be printed in the publication recommended. It contained the names of one hundred and four members. Thirty-six were noted as present at the meeting. Many names prominent in ophthalmology so listed were: Drs. Harry Friedenwald, Henry Gradle, Henry E. Noyes, James F. Noyes, Simon Pollock, Robert Sattler, Giles C. Savage, George E. de Schweinitz, Myles Standish, George T. Stevens, Cassius D. Wescott and H. V. Würdemann.

The third proposition was that six hours for three days be the minimum time required to read the papers submitted, to make attendance of the meetings worth the time and trouble of the journey. Incidentally, the same arguments are pertinent today, when the growth

of the American Medical Association and the increasing number of sections is raising, more and more, the serious problem of where this great and growing convention can be housed. Few places can accommodate three half-day sessions for all sections. It is only by showing interest in the sessions by large attendance that members of the section on ophthalmology may hope to continue to be accorded three full sessions. All are needed, for even with three sessions the officers of the section are unable to accept much of the worthy material presented for their consideration.

The final recommendation was that the section appoint an "Executive Committee of three, whose general duties should be to look after all matters pertaining to the development of the Section not already in the hands of existing officers." This body, under the same name, functions today.

Some consideration of the relation of the section to the American Board of Ophthalmology would seem to be in order, as this relation differs radically from that between the Board and the other ophthalmic societies. Membership in the American Medical Association is a requisite for certification by the Board, rather than vice versa. The suggestion has been made that the voting privilege in the section should be reserved for those holding this certificate. I am not entirely convinced that such a requirement would be wise. Do not misunderstand me in this. I am sure that the effort expended in study to acquire this recognition has been an enormous stimulant to the advancement in the theory and practice of ophthalmology, and I believe that it will be an outstanding achievement for the specialty when the certificate of the Board shall be held by a great majority of members. However, it is better that the vote in this society be dependent solely on fellowship in the parent organization.

Such, then, may be noted as a few of the outstanding points in the development of the Section on Ophthalmology of the American Medical Association. In my opinion they demonstrate that a leading function of the section is the responsibility of speaking as an official mouthpiece of the ophthalmic profession of the United States and that to express itself as such, through the proper channels, to the House of Delegates of the American Medical Association has become its obligation.

The large attendance at the executive sessions attests to the fact that there is a general recognition of this responsibility by the members. Though at times the long duration of arguments and the slightly turbulent atmosphere may be distressing, nevertheless this is the forum where differences of opinion should be settled. Indeed, these discussions are a proper function of this body.

For instance, such a controversial question as that regarding the teaching of optometrists by ophthalmologists should find its answer here. I believe that it is unsound to refuse to give instruction to a group of men who are admittedly prescribing a large proportion of all the glasses worn in this country and that the sooner cooperation can be sanctioned, the better for all concerned. Here, also, the problems arising over any remuneration to the ophthalmologist incidental to the manufacture and fitting of spectacles should be considered. The matter is far from simple. But, in general, I am sure that the vast majority of the members will agree with me that there should be no secret understanding between the ophthalmologist and the optician, nor should there be any compensation where there is no financial risk or effort involved. Indeed, to accept such compensation is in direct contraversion of the By-Laws of the American Medical Association.

The recent trend toward the socialization of medicine is, without doubt, by far the major problem confronting ophthalmology. But the uncertainty with regard to what form, if any, the contemplated legislation may take renders consideration of the question by this body somwhat futile at this time. Later, should the need arise, discussions concerning regulations of peculiar importance to the ophthalmologist will appear frequently on the agenda.

It must not be forgotten that these meetings, as said before, are limited as to time and that there are functions other than those concerned with the formulation of policies and ethics that are of primary importance. Here, also, should be the forum for the presentation of scientific papers. This is the place where all, from the youngest to the oldest member of the specialty, should be heard when they wish to present ideas of outstanding worth.

In the past it has been customary to issue a "Fall Bulletin" or "Call for Papers" reminding members of the time of the next meeting of the section and urging them to contribute to the program, at the same time suggesting the requisites for a satisfactory contribution. March 15 has been set as the date by which the completed papers must be in the secretary's office, not only in order to permit the secretary to have the completed program in time for publication in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION but also in order that a presessional volume may be prepared, including the complete program in abstract with the names of those opening the discussions on each paper. It would seem desirable that this practice be resumed for the benefit of all concerned.

In closing, let me urge moderation, cool heads and dissension at a time when all organized medicine, all its achievements, all its humanities as we have known them and, indeed, our very conception of our way of life appear to be in danger of radical transformation.

503 North Grand Avenue.

The Good Doctor.—When one doctor says of another, "He is a good doctor," the words have a particular meaning. You will hear the expression used not only about some general practitioners, but also about some specialists. As I understand it, a good doctor is one who is shrewd in diagnosis and wise in treatment; but, more than that, he is a person who never spares himself in the interests of his patients; and in addition he is a man who studies the patient not only as a case but also as an individual. . . . How does one learn to devote oneself unsparingly to his patients? You cannot get this from books or from formal clinical instruction. It is something which is passed on from one generation of doctors to the next, and the easiest way to acquire it is to work with a doctor who already has it in his blood. Lister, for example, was a good doctor: he used to visit his patients in King's every day, including Sundays, and his eminence and his preoccupation with research did not prevent him from showing great understanding and consideration of their feelings. Your patients need from you more than diagnostic and therapeutic efficiency. They do not come to you to be cured; they come to be relieved of their pains and other symptoms and to be comforted.—Sir Hugh Cairns, K.B.E., M.A., D.M., Oxfd, F.R.C.S., Nuffield Professor of Surgery, University of Oxford, The Student's Objective, *The Lancet*, Oct. 8, 1949.

AUREOMYCIN: PRESENT STATUS IN THE TREATMENT OF HUMAN INFECTIONS

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Extensive clinical observations with penicillin and streptomycin have shown that there are certain infectious diseases which are not affected by either of these antibiotics. A continued search by microbiologists for other agents which will widen the attack on human infections has resulted in the discovery of aureomycin by Duggar.[1] Early studies showed that aureomycin inhibited the growth of both gram-positive and gram-negative bacteria.[2] In addition, this antibiotic was also active against rickettsial and certain virus infections.[3] Pharmacologic studies revealed that aureomycin was active when the antibiotic was administered orally and that it possessed a low degree of toxicity.[4] It was soon established by Long and his group in Baltimore,[4b, c] and Finland and his associates in Boston,[5] that encouraging results in the treatment of human disease followed the use of aureomycin. Since aureomycin is now generally available and the drug has been evaluated in a large number of patients during the past year, it is appropriate at this time to review the present status of aureomycin in the treatment of human infections. This summary will include the diseases that are favorably affected by aureomycin, methods of administration and schedule of doses and the side effects resulting from the drug.

CLINICAL RESULTS WITH AUREOMYCIN

Bacterial Diseases.—Many infections due to gram-positive bacteria have responded favorably to the oral administration of aureomycin. In some instances successful therapy followed failure to control the infection with either penicillin or streptomycin. Chandler and Bliss[2b] reported that strains of staphylococci were sensitive to the in vitro action of aureomycin. We have treated 5 patients with bacteremia due to coagulase-positive staphylococci in whom in vitro studies revealed that all five strains were highly resistant to penicillin and that four of the five strains were resistant to streptomycin. Consequently, the patients had failed to respond to treatment with penicillin and with streptomycin. The growth of the five strains of staphylococci was inhibited in vitro by 1 microgram per cubic centimeter of aureomycin. After the oral use of aureomycin, 4 of the 5 patients recovered. One patient with agranulocytosis expired. In addition to these 5, 4 patients with nonbacteremic staphylococcic infections resistant to penicillin and streptomycin were treated successfully with aureomycin. There is little doubt that aureomycin is an effective agent in the treatment of staphylococcic sepsis. Aureomycin has been used successfully in the treatment of pneumococcic pneumonia.[6] Experimental studies have indicated that aureomycin is active against beta-hemolytic streptococci and also against Streptococcus faecalis.[7] Aureomycin therapy is indicated in those patients having subacute bacterial endocarditis due to Str. faecalis or to streptococci of the viridans group, particularly in those instances in which either penicillin or streptomycin has failed to eradicate the infection.

Aureomycin has proved to be effective in some bacterial infections due to gram-negative organisms. Finland and his associates[5] reported that gonorrhea responded to treatment with aureomycin, but less favorably than with penicillin. The same group also observed that aureomycin was active against meningococcic infections.[6] The results with aureomycin in typhoid have not been too satisfactory.[8] Chloramphenicol (chloromycetin®) appears to be a superior agent for treatment in this infection.[9] Other Salmonella infections have not responded too favorably to treatment with aureomycin, but infections due to Escherichia coli have been successfully treated with aureomycin.[10] In our own experience aureomycin produced a dramatic effect in a young woman with postpartum sepsis in whom a bacteremia due to Esch. coli failed to respond to all other forms of therapy. The oral administration of aureomycin promptly brought the infection under control. We have also had favorable responses with this drug in treatment of urinary tract infections due to Esch. coli, in which other forms of therapy have failed. This is in agreement with the observations of others.[11] An organism commonly found in urinary tract infections is Aerobacter aerogenes. Paine and his associates[2c] have shown that this species is sensitive to aureomycin. Favorable results have been obtained in patients having urinary infections due to A. aerogenes. We have treated successfully 1 patient having a bacteremia due to this species in whom the primary focus was probably the urinary tract. In vitro studies have demonstrated that Proteus vulgaris and Pseudomonas aeruginosa are resistant to aureomycin.[2] We have treated urinary tract infection due to P. vulgaris in 5 cases and due to Ps. aeruginosa in 2 without any

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1. Duggar, B. M.: Aureomycin: A Product of the Continuing Search for New Antibiotics, Ann. New York Acad. Sc. **51**: 177 (Nov. 30) 1948.

2. (a) Price, C. W.; Randall, W. A., and Welch, H.: Bacteriological Studies of Aureomycin, Ann. New York Acad. Sc. **51**: 211 (Nov. 30) 1948. (b) Chandler, C. A., and Bliss, E. A.: In Vitro Studies with Aureomycin, ibid. **51**: 221 (Nov. 30) 1948. (c) Paine, T. F., Jr.; Collins, H. S., and Finland, M.: Bacteriologic Studies on Aureomycin, J. Bact. **58**: 489 (Oct.) 1948.

3. (a) Wong, S. C., and Cox, H. R.: Action of Aureomycin Against Experimental Rickettsial and Viral Infections, Ann. New York Acad. Sc. **51**: 290 (Nov. 30) 1948. (b) Anigstein, L.; Whitney, D. M., and Beninson, J.: Aureomycin: A New Antibiotic with Antirickettsial Properties; Its Effect on Experimental Spotted Fever and Epidemic Typhus, ibid. **51**: 306 (Nov. 30) 1948.

4. (a) Harned, B. K., and others: The Pharmacology of Duomycin, Ann. New York Acad. Sc. **51**: 182 (Nov. 30) 1948. (b) Schoenbach, E. B.; Bryer, M. S., and Long, P. H.: The Pharmacology and Clinical Trial of Aureomycin: A Preliminary Report, ibid. **51**: 267 (Nov. 30) 1948. (c) Bryer, M. S.; Schoenbach, E. B.; Chandler, C. A.; Bliss, E. A., and Long, P. H.: Aureomycin, Experimental and Clinical Investigations, J. A. M. A. **138**: 117 (Sept. 11) 1948.

5. Finland, M.; Collins, H. S., and Paine, T. F., Jr.: Results of Laboratory Studies and of Clinical Use in One Hundred Cases of Bacterial Infections, J. A. M. A. **138**: 946 (Nov. 27) 1948.

6. Collins, M. S.; Paine, T. F., Jr., and Finland, M.: Aureomycin in Treatment of Pneumococcal Pneumonia and Meningococcemia, Proc. Soc. Exper. Biol. & Med. **69**: 263 (Nov.) 1948.

7. Chandler and Bliss,[2b] Bryer, Schoenbach, Chandler, Bliss and Long,[4c]

8. Collins, H. S.; Paine, T. F., Jr.; Wells, E. B., and Finland, M.: Aureomycin: A New Antibiotic; Evaluation of Its Effects in Typhoid Fever, Severe Salmonella Infections and in a Case of Colon Bacillus Bacteremia, Ann. Int. Med. **29**: 1077 (Dec.) 1948.

9. Woodward, T. E.; Smadell, J. E.; Ley, H. L., Jr.; Green, R., and Mankikar, D. S.: Beneficial Effect of Chloromycetin in the Treatment of Typhoid Fever, Ann. Int. Med. **29**: 131, 1948.

10. Bryer, Schoenbach, Chandler, Bliss and Long,[4c] Collins, Paine Wells and Finland.[8]

11. Ruttenberg, A. M., and Schweinburg, F. B.: Aureomycin in Urinary Infections Due to Gram Negative Organisms, Proc. Soc. Exper. Biol. & Med. **70**: 464 (March) 1949.

benefit to the patients. In addition, a patient with meningitis due to Ps. aeruginosa has failed to respond satisfactorily to the drug. Experimental studies indicate that Klebsiella pneumoniae is sensitive to the action of aureomycin.[12] This also applies to Hemophilus influenzae. Encouraging reports have appeared in the treatment of granuloma inguinale with aureomycin.[13] Woodward and his associates[14] have shown experimentally and clinically that aureomycin is effective in the treatment of tularemia. Aureomycin appeared to be superior to chloramphenicol in this disease and as effective as streptomycin.

Although encouraging results in our clinic and elsewhere have been obtained in the treatment of brucellosis with the simultaneous administration of streptomycin and sulfadiazine, this type of therapy has possessed certain disadvantages. It was necessary to hospitalize the patients; streptomycin provoked toxic symptoms in some patients, and relapses occurred too frequently. The initial report from Baltimore indicated that aureomycin might be a more satisfactory form of therapy.[15c] This was confirmed in studies in Mexico on patients having brucellosis due to Brucella melitensis.[15] Of a total of 26 patients treated, many of whom were seriously ill, 20 have remained free of brucellosis clinically and bacteriologically for almost a year after therapy had been started. These results are superior to those obtained with the combination of streptomycin and sulfadiazine. In Minneapolis 22 patients having either acute or chronic brucellosis have been treated with aureomycin. In 17 of the 22 patients the presence of the disease was established bacteriologically. All infections were due to Brucella abortus with the exception of one, which was due to Br. melitensis. To date there have been two clinical relapses and one bacteriologic relapse. While patients treated for brucellosis should be followed for at least a year to evaluate the therapy, thus far aureomycin has given the most satisfactory results. Two patients have been treated with chloramphenicol, 1 having an infection due to Br. abortus and the other caused by Brucella suis. Both patients showed a favorable response. Not enough time has elapsed to offer comparative results with aureomycin and chloramphenicol in the therapy of brucellosis. Recent experimental and clinical studies indicate that aureomycin is effective in whooping cough.[16]

Rickettsial Diseases.—The investigations of Wong and Cox[5a] and Anigstein, Whitney and Beninson[5b] demonstrated that aureomycin was effective in experimentally induced rickettsial diseases such as Rocky Mountain spotted fever, epidemic typhus, murine typhus, scrub typhus (tsutsugamushi fever), rickettsialpox and Q fever. These observations have been followed up by clinical studies, and it has been clearly demonstrated that aureomycin is an effective therapeutic agent for the treatment of human Rocky Mountain spotted fever.[17] It has also been shown that aureomycin is active in recrudescent epidemic typhus (Brill's disease).[18] Aureomycin has also affected favorably the clinical course of Q fever.[19] The antibiotic has produced prompt recovery in patients with murine typhus.[20]

Virus Infections.—Wong and Cox[5a] reported that in experimentally infected animals aureomycin was active against the viruses causing psittacosis and lymphogranuloma venereum, but the drug was without effect against a B strain of influenza, canine distemper, rabies, Philippine fowl disease (Newcastle disease), Venezuelan equine encephalomyelitis and MES-1 strain of poliomyelitis. Clinically, aureomycin has been used successfully in the treatment of human lymphogranuloma venereum.[13a] We have not found aureomycin to be effective in chickenpox and in mumps.

Probable Virus Diseases.—We have treated 7 patients having infectious mononucleosis, which is thought to be due to a virus, and in 5 of the 7 there was decided improvement with defervescence within twenty-four to forty-eight hours. Two of these patients had received penicillin without favorable response. Although more evidence in a large number of cases is required, it would appear that in this small group of cases aureomycin affected the clinical course of infectious mononucleosis favorably. Although the etiologic agent has not been isolated in cases of so-called atypical pneumonia, those cases showing the appearance of cold agglutinins in the serum samples are presumed to be due to a virus. Several reports have stated that aureomycin is effective in the treatment of atypical pneumonia.[21] Our own experience has been limited to a small group of cases, but we believe that the results warrant the use of aureomycin therapy in further cases of atypical pneumonia or pneumonia not of bacterial origin.

Diseases of Doubtful Causation.—Two patients having pemphigus have been given aureomycin without any alternation in the course of the disease. We have not found aureomycin to be effective in Reiter's syndrome.

Spirochetal Diseases.—Heilman[22] found aureomycin to be effective in the treatment of experimental relapsing fever in mice and in experimental leptospirosis in hamsters. O'Leary, Kierland and Herrell[23] stated that aureomycin had some antispirochetal effect in 2 human cases of primary syphilis. Observations in primary and secondary syphilis have also been made by Irgang and

12. Footnotes 2 and 4c.

13. (a) Wright, L. T.; Sanders, M.; Logan, M. A.; Prigot, A., and Hill, L. M.: Aureomycin: A New Antibiotic with Virucidal Properties; I. A Preliminary Report on Successful Treatment in Twenty-Five Cases of Lymphogranuloma Venereum, J. A. M. A. **138**: 408 (Oct. 9) 1948. (b) Greenblatt, R. B.; Dienst, R. B.; Chen, C., and West, R.: Oral Aureomycin in the Therapy of Streptomycin-Resistant Granuloma Inguinale, South. M. J. **41**: 1121 (Dec.) 1948.

14. Woodward, T. E.; Raby, W. T.; Eppes, W.; Holbrook, A., and Hightower, J. A.: Aureomycin in the Treatment of Tularemia, J. A. M. A. **139**: 830 (March 26) 1949.

15. Spink, W. W.; Brande, A. I.; Castaneda, M. R., and Goytia, R. S.: Aureomycin Therapy in Human Brucellosis Due to Br. Melitensis, J. A. M. A. **138**: 1145 (Dec. 18) 1948.

16. Bell, J. A.; Pittman, M., and Olson, B. J.: Pertussis and Aureomycin, Pub. Health Rep. **64**: 589 (May 13) 1949.

17. Cooke, C.: Rocky Mountain Spotted Fever Treated with Aureomycin, J. A. M. A. **139**: 885 (Nov. 20) 1948. Ross, S.: Aureomycin Therapy of Rocky Mountain Spotted Fever, ibid. **138**: 1213 (Dec. 25) 1948. Harrell, G. T.; Meads, M., and Stevens, K. M.: Aureomycin Clinical Use in Rocky Mountain Spotted Fever: Results of Susceptibility Tests and Blood Assays Using a Turbidimetric Method, South. M. J. **42**: 4 (Jan.) 1949.

18. Schoenbach, E. B.: Aureomycin Therapy of Recrudescent Epidemic Typhus (Brill's Disease), J. A. M. A. **139**: 450 (Feb. 12) 1949.

19. Lennette, E. H.; Meikeljohn, G., and Thelen, H. M.: Treatment of Q Fever in Man with Aureomycin, Ann. New York Acad. Sc. **51**: 331 (Nov. 30) 1948.

20. Knight, V.; Ruiz-Sanchez, F.; Ruiz-Sanchez, A., and McDermott, W.: Aureomycin in Typhus and Brucellosis, Am. J. Med. **6**: 407 (April) 1949.

21. Kneeland, Y.; Rose, H. M., and Gibson, C. D.: Aureomycin in the Treatment of Primary Atypical Pneumonia, Am. J. Med. **6**: 41 (Jan.) 1949. Schoenbach, E. B., and Bryer, M. S.: Treatment of Primary Atypical Nonbacterial Pneumonia with Aureomycin, J. A. M. A. **139**: 275 (Jan. 29) 1949. Finland, M.; Collins, H. S., and Wells, E. B.: Aureomycin in the Treatment of Primary Atypical Pneumonia, New England J. Med. **240**: 241 (Feb. 17) 1949.

22. Heilman, F. R.: Aureomycin in the Treatment of Experimental Relapsing Fever and Leptospirosis Icterohaemorrhagica (Weil's Disease), Proc. Staff. Meet., Mayo Clin. **23**: 569 (Dec. 8) 1948.

23. O'Leary, P. A.; Kierland, R. R., and Herrell, W. E.: The Oral Administration of Aureomycin (Duomycin) and Its Effects on Treponema Pallidum in Man, Proc. Staff. Meet., Mayo Clin. **23**: 574 (Dec. 8) 1948.

Alexander.[24] Further observations are necessary before the status of aureomycin in syphilis can be determined.

Tuberculosis.—Because of the lack of sufficient data, aureomycin cannot be recommended for the treatment of tuberculosis at this time.

METHODS OF ADMINISTRATION AND DOSAGE

A decided advantage of aureomycin is that the antibiotic is effective in systemic disease when administered by mouth. It has been shown that following the administration, the drug diffuses into the pleural cavity, bile and cerebrospinal fluid. The drug also passes through the placenta and may be present in the fetal circulation.[25] A satisfactory schedule of doses has been 30 to 50 mg. per kilogram of body weight per day. This has been administered to adults in a dose of 0.5 Gm. every six hours for one to three weeks. Investigations have been made with a parenteral preparation of the drug, the hydrochloride of aureomycin. When this preparation was given intramuscularly in various diluents, it produced pain and irritation and absorption was considerably delayed. We have successfully treated a number of patients by administering aureomycin hydrochloride intravenously. In these circumstances a single dose of 3 to 5 mg. per kilogram of body weight has been given in 250 cc. of isotonic sodium chloride solution as an intravenous drip. This has been repeated every eight to twelve hours for several days. We have seen an inflammatory reaction occurring in a vein as a result of this type of intravenous therapy in only 1 patient.

SIDE EFFECTS OF AUREOMYCIN

When aureomycin is administered orally, nausea is encountered in some patients. Occasionally a patient may be unable to tolerate oral therapy because of vomiting. Epigastric distress has also occurred. The stools become soft, though not watery, and almost odorless. There may be some burning of the rectum. It is of interest in those patients who do not tolerate the drug when given orally that intravenous therapy is not associated with these gastrointestinal complaints. We have not encountered blood dyscrasias, skin eruptions or fever due to the drug. The toxic effects of aureomycin to date have been minimal.

CONCLUSIONS AND SUMMARY

Aureomycin is an antibiotic which is effective against a variety of infectious diseases. These include bacterial infections and those of rickettsial and virus origin. The drug is active when administered orally, and the side effects have not been serious.

ABSTRACT OF DISCUSSION

DR. MARTIN H. SIEFERT, Wilmette, Ill.: Dr. Spink mentioned the few cases of mononucleosis. In the Chicago North Shore area there has been almost an epidemic of mononucleosis, most of the cases of which have kept recurring. There has been more or less chronic difficulty with this disease since last October. Under the direction of Dr. Van Winkle, of the Therapeutic Trials Committee of the American Medical Association, and with the cooperation of Dr. Chandler in the laboratory of the American Medical Association, we have run a series of tests with aureomycin. I have tested about 70 patients, and I believe that results will be almost completely negative. They have had relapse after relapse. We have now administered chloramphenicol (chloromycetin®) to about twelve patients, and I think it may be giving better results. We had a control series with capsules made by Lederle Laboratories, Division American Cyanamid Corporation, and I was fooled into giving the control medicament to one of my own youngsters, who had had hepatitis three times, because several patients in the first six or so got spectacularly well on the control capsule. Patients also had a great amount of rectal itching. A woman who had her menstrual period at the time, and wore a pad, had extreme irritation of the vulva. As Dr. Spink has said, all these things are nuisances and are not terribly serious. Patients had a good deal of diarrhea, also. We found that cottage cheese was better in relieving this condition than either milk or a proprietary colloidal suspension of aluminum hydroxide.

DR. DAVID I. MACHT, Baltimore: I am interested in aureomycin primarily as a pharmacologist, and I would like data concerning the physiologic or pharmacologic effects of aureomycin on the blood, particularly on the thromboplastic properties of the blood—in other words, coagulation time. I have received a number of specimens of blood with the diagnosis of pemphigus by the Macht-Pels and Macht-Ostro tests, and in at least 3 cases these patients were treated with aureomycin. One was reported to be improving, but the others did not show any improvement. In other cases which were not of pemphigus but only simulated pemphigus patients improved with aureomycin therapy. I think this confirms Dr. Spink's experiences. As Dr. Spink said, aureomycin was discovered by a great scientist who was not a medical practitioner but a professor of botany—Professor Duggar. This should stress the importance of cooperation among medicine, the medical basic sciences and the other sciences, especially biologic.

DR. CARL V. MOORE, St. Louis: I should like to ask Dr. Spink whether in the 10 patients with infectious mononucleosis, treated with aureomycin, there was any evidence that the hepatic involvement in the disease was altered.

DR. HAROLD A. LYONS, St. Albans, Long Island, N. Y.: We initially started treating a few patients with infectious mononucleosis with aureomycin, and we have over 30 patients now at the U. S. Naval Hospital at St. Albans receiving 2 Gm. of the drug a day for six days. Results are comparable to those of Dr. Spink. Similar hepatic complications were strikingly improved. The laboratory tests and the clinical responses, even the jaundice in many instances, showed improvement within one week. This was rather striking. We observed no change in the blood cell count. However, in our first 3 cases it did show some reversion to normal. We noted that in some cases a heterophil response did not develop, even though repeated serum heterophil agglutination tests were made. As Dr. Rose of New York reported in the treatment of rickettsialpox, we thought that perhaps patients treated early with aureomycin did not have a positive response to the complement fixation test. There may be some analogy, but as yet it is not known. The day of the disease should be plotted against the day of aureomycin therapy; we have noted that in some patients to whom we have not given any aureomycin there has been dramatic improvement. It is not the day of hospitalization or the day of treatment that is important, but the day of the disease.

DR. WESLEY W. SPINK, Minneapolis: I did not mean to introduce the subject of infectious mononucleosis for major discussion. I simply wanted to point out that we treated 10 patients with this disease and that, coincident with therapy, there was prompt recovery. We have treated 2 patients who have had hepatitis in association with the mononucleosis, and there was no dramatic response to aureomycin. As for Dr. Macht's question on aureomycin's effect on blood coagulation, we have not made any observations concerning this point. I did mention that aureomycin had no effect on the clinical course of 2 patients with pemphigus.

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ROENTGEN THERAPY OF THROMBOPHLEBITIS

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In 1931 L. M. Zimmermann and one of us (G. de T.)[1] made an experimental study of thrombophlebitic edema. We described a simple method of producing intravascular clotting of the blood by giving injections of concentrated tissue extract. This gave us the opportunity to study various methods which would hasten the disappearance of thrombophlebitic edema; among these methods was roentgen therapy. The rate of disappearance of the experimentally produced edema following radiation was just as rapid as that attained by administration of a mercurial diuretic.[2] The activation of a low grade resting infection in varicose veins by a dose of 125 to 135 r could be demonstrated in patients by a decided rise in the temperature of the skin[3]; that a chronic infection could be beneficially influenced by mild, controlled activation has been suggested by several authors.[4] For these reasons, since 1933 we have exposed a selected group of patients with thrombophlebitis of the extremities to roentgen therapy and are here reporting 100 consecutive cases from our files. Previous literature on this subject is meager,[5] and the cases are neither numerous nor adequately classified. Although literature on the roentgen therapy of inflammatory lesions is plentiful,[6] previous reviews lack information on this point.

CLASSIFICATION OF TREATED MATERIAL

Thrombophlebitis of the lower extremities manifests itself in distinct clinical entities, the origin, course and sequelae of which require different management. We have divided patients with these conditions into six groups, which are briefly characterized under the following headings.

1. *Acute Superficial Phlebitis in Preexisting Varicosities.*—Since the veins are dilated and usually harbor latent infection, a thrombosis in patients with acute superficial phlebitis in preexisting varicosities results in huge, painful perivenous exudates. The varicosities have an ascending character, seldom produce fever and seldom break loose. Perivenous lymphostasis and exudation of plasma in the loose subcutaneous tissue is severe. Thirty patients were treated in this group.

2. *Acute Superficial Phlebitis in Veins Collateral to Deep Venous Obstruction.*—Patients with acute superficial phlebitis in veins collateral to deep venous obstruction give the history or show the characteristic symptoms of an old deep venous occlusion with a collateral pattern of superficial varicosities. Such collateral veins have the tendency to thrombose after the occurrence of slight inciting factors, such as trauma, rest in bed and intercurrent infection. Curiously enough, the old deep venous thrombosis does not show activation; however, massive edema of the extremity is severe if the functioning collateral veins are occluded. Seventeen patients were treated in this group.

3. *Migrating Phlebitis of Thromboangiitis Obliterans (Buerger's Disease).*—Patients with migrating phlebitis of thromboangiitis obliterans have short segmental thrombi in the upper or lower extremities which are associated with the arterial disease of thromboangiitis obliterans. This lesion is a granulomatous inflammation of the vascular wall showing evidence of local vascular allergy and having a recurrent, migrating character. It may affect any part of the body. Five patients in this group were given roentgen therapy.

4. *Deep Venous Thrombosis of the Calf.*—Patients with deep venous thrombosis may have a tender, swollen, indurated calf. They have muscular spasm or defense on dorsiflection of the foot. The affected calf is warmer than the other, and there is evidence of venous stasis when the leg is in the dependent position. Emboli from this source are frequent. Eighteen patients were treated in this group.

5. *Iliofemoral Venous Thrombosis.*—In iliofemoral venous thrombosis ("milk leg") the venous obstruction is at the iliofemoral bottleneck where the venous drainage of the superficial femoral, deep femoral and hypogastric veins meet. Massive edema results, partly because of perivenous lymphatic obstruction, or hyperplasia of the inguinal lymphatic vessels, which are often enlarged from previous infections in the foot, groin or genital and pelvic organs. Twelve patients were treated in this group.

6. *Subacute Thrombophlebitic Indurations.*—Subacute thrombophlebitic indurations are located in the lower third of the calf, usually on the medial and occasionally on the posterior surface. They are hard areas of lymphostasis with round cell infiltrations, fibroplastic reactions and some fat necrosis. They have a tendency to recede into a brawny induration and then to flare up with a hard, scalloped, inflamed border and progress centrally until they involve the entire leg or encircle the lower third of the leg with a tight constricting band. Eighteen patients with lesions of this type were treated.

METHOD OF TREATMENT

Most patients receive a short course of roentgen therapy varying between one and six treatments of 80 r (in air). We use 200 kilovolts and 20 milliamperes at a focal skin distance of 50 cm. with a medium Thoraeus filter.[7] The half-value layer is 1.9 cu. mm. The number and size of fields vary with the extent of

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From the Department of Roentgenology, Northwestern University Medical School; the Department of Surgery, University of Illinois College of Medicine, and St. Luke's Hospital.

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7. The Thoraeus filter is a primary filter of tin together with a secondary filter of copper. In the 200 to 400 kilovolt range such a filter selectively transmits relatively more of the short wavelength part of the beam than does a filter consisting of tin or copper only (Glossary of Radiology and Atomic Energy, Washington, D. C., National Research Council, 1949).

the disease. An area of 400 sq. cm. or less is treated each day, with an interval of two to seven days between consecutive treatments. The clinical response to roentgen therapy and additional supportive measures determines the total number of treatments. Most patients require one to three treatments on each of the areas. The patients in this series have been free of skin reactions, damage to the tissues or irradiation sickness.

ANALYSIS OF RESULTS

The results of the roentgen therapy were classified as successful, doubtful or poor. Treatment was considered successful when the periphlebitic exudate subsided, when pain was relieved and when ambulation was possible. This was true of 85 of the 100 cases. A doubtful result was noted when the response was not immediate or when other forms of therapy could have been responsible for the improvement. Failure was noted when the lesion was uninfluenced or progressed in spite of roentgen therapy. The results were obtained by personal reexamination, by follow-up letters and by consulting our office files; many of our patients had a follow-up record of one to ten years. The accompanying table shows the results in the various subgroups.

Results of Roentgen Therapy in 100 Cases of Thrombophlebitis

Group	Success	Doubtful	Failure	Total
1	24	2	4	30
2	15	2	..	17
3	4	1	..	5
4	15	2	1	18
5	11	1	..	12
6	16	1	1	18
Total	85	9	6	100

Clinical forms of phlebitis as we have described them have a pronounced lymphatic component. The thrombosed segments are hot and tender to pressure and are surrounded by an inflammatory exudate in which plasma fibrin readily clots. Relief of pain is often dramatic, and previously bedridden patients are able to walk without discomfort.

COMMENT

Since the results of roentgen therapy in 85 per cent of the cases were classified as successful, it might be well to analyze briefly the object of roentgen treatment of phlebitis. The administration of a well timed and well planned dose of roentgen rays hastens the absorption of the inflammatory exudate and overcomes the blockade of lymph at isthmic points, such as the popliteal fossa, the groin or the axilla. It is obvious that larger doses of roentgen rays (exceeding 200 r) might readily produce enough destruction in the lymph nodes to cause obstruction to lymph flow. In the experimental animal Hodes and Griffith [8] found no interference with lymph flow when they treated areas in the leg with roentgen rays and watched the appearance of the injected contrast medium of colloidal solution of thorium dioxide (thorotrast®) in the nodes of the popliteal fossa or groin. Of great interest are the studies of White and Dougherty,[9] who show that administration of minimal doses of roentgen rays, such as 10 r, may produce dissolution of lymphocytes, but only in the presence of an intact pituitary—corticoadrenal mechanism. This will raise the level of gamma globulins in the blood and increase the titer of antibodies. On the other hand, administration of a dose such as 200 r will produce severe lymphopenia and will effect a rise in the level of immune globulins in the absence of the adrenal glands. This second effect is a direct destructive effect on the lymphocyte by roentgen rays.

Further mechanisms which may operate in bringing about striking clinical results, such as increase in the proteolytic enzymes which aid in the absorption of exudates, mobilization of edema fluid by ionization of the intercellular and intracellular water, a direct effect on the sensory nerve endings by raising their threshold to pain and the direct bactericidal effect, have been discussed by Henschen and Becker.[5b] Since these considerations are mostly speculative, they shall not be further discussed; however, the presence of lymphopenia and the rise in the level of the immune globulins are established experimental and clinical observations and thus need emphasis.

Elsewhere one of us (G. de T.) with Fowler has discussed the general problem of thromboembolism.[10] The use of anticoagulants is required in the disturbance of the clotting mechanism of the blood observed in acute thrombosis; the use of paravertebral sympathetic block is limited to patients exhibiting definite vasospasm with cold, pale extremities and diffuse vascular ache; the division of veins proximal to the thrombus may become necessary when embolic phenomena occur in spite of adequate anticoagulant therapy or when the administration of anticoagulants is contraindicated. The role of roentgen therapy in these conditions is limited but exceedingly effective. Roentgen therapy does not seem to affect the thrombus, although little is known about its influence on clot retraction; it does not affect the sympathetic nervous system, even though some authors have advocated paravertebral roentgen therapy in vasospastic conditions, and it definitely hastens the absorption of the periphlebitic exudate and the regression of hyperplastic lymph nodes. Since most of the nerve fibers to the blood vessels are found in the adventitia, both relief of pain and improvement in reflex vasospasm can be observed when the inflammation around the adventitia subsides. Finally, as was pointed out in 1932,[5] the hyperemia produced by roentgen radiation is much more pronounced when the tissues are inflamed than when they are normal.

The general rule that the more acute the inflammation, the smaller the dose, must prevail here too. We have seen severe febrile reactions from the administration of 150 to 200 r to patients with phlebitic streaks. The optimal dose for most acute and subacute lesions seems to be 80 to 100 r. Since the result of roentgen therapy is cumulative, it seems wiser not to use daily treatment in the same area but to permit the reaction to subside before the next dose is given. In our series an average of three treatments was given to a specific area, the size of these areas being 200 to 400 sq. cm.

SUMMARY

One hundred patients with thrombophlebitis of the extremities were treated with a short course of roentgen rays. The lesions were classified into six types: acute superficial, acute collateral and migrating phlebitis, recurrent thromboses of the muscles of the calf, ilio-

8. Hodes, P. J., and Griffith, J. Q.: Effect of Roentgen Irradiation upon Lymphatic Flow in Rats, Radiology **37**: 203, 1941.

9. White, A., and Dougherty, T. F.: Significance of the Effects of X-Ray on Lymphoid Tissue, Federation Proc. **4**: 109, 1945.

10. de Takats, G., and Fowler, E. F.: The Problem of Thromboembolism, Surgery **17**: 153, 1945.

femoral venous obstructions and recurrent phlebitic indurations. These varieties obviously require different considerations. The object of therapy was to throttle or abort the acute lymphatic obstruction or lymphatic hyperplasia surrounding the thrombosed segment of the vein. The thrombosis per se requires other forms of therapy, such as the administration of anticoagulants, division of veins or the use of sympathetic block. These methods all are employed in our clinic. This coordinated effort of roentgenologists and surgeons has yielded favorable results in properly selected cases of thrombophlebitis.

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ABSTRACT OF DISCUSSION

DR. GEZA DE TAKATS, Chicago: It has been interesting to see the development of roentgen therapy for thrombophlebitis. The problem of thromboembolism has a great many aspects. It should be emphasized that it is only the lymphatic component of thrombophlebitis that roentgen therapy can attack. This lymphatic component varies among patients and in the same patient under different conditions. We have found no evidence in the literature nor have we made any personal observations which might indicate that roentgen radiation has any effect on blood clotting, at least not in the doses employed by us, nor have we found that blockage of the sympathetic nerves can be produced by paravertebral roentgen therapy, since this therapy produces none of the symptoms which demonstrate the successful blockade of the sympathetic nerves, such as increase in the resistance of the skin or dryness of the skin. It is obvious that embolism will not be prevented by roentgen therapy. This leaves only one component which roentgen therapy can attack and that is the lymphatic component. When we started sending patients for roentgen treatment in the early thirties, I am sure the doses were too large. These patients received 100 and 125 r directed toward acute phlebitic and periphlebitic streaks; often they responded with the development of a high temperature and leukocytosis and sometimes with spread of the lesion. As our experience increased (the result of frequent discussions between Dr. Jenkinson and me) we found that 80 r seemed to be the optimum dose but that even this could be depressed to possibly 50 r. Sometimes one treatment would suffice for the acute lesion. Another thing we have learned is that the second treatment should occur at least four or five days after the first, since a single treatment might be sufficient to abort the entire lesion. This study emphasizes the importance of a closer cooperative effort on the part of the vascular service and the roentgenology department in managing patients with acute or recurrent attacks of phlebitis. Classification is important because each group requires a different type of treatment.

Chloromycetin in Treatment of Scrub Typhus.—Sixty-nine patients with scrub typhus were treated with chloromycetin. Although some of these were desperately ill when therapy was instituted, there were no deaths in this group. The mortality rate among the 19 untreated patients observed during the present work was slightly greater than 5 per cent; this agrees well with the figure of 6.7 per cent in a series of 164 patients observed by Lewthwaite in Malaya. The most commonly used therapeutic regime in the present work employed about 6.0 Gm. of chloromycetin orally over a period of 24 hours. This was adequate to render patients, who acquired their disease naturally, afebrile within an average of 32 hours irrespective of the time during the course of the disease when the drug was started. These patients convalesced rapidly and had no relapses. . . . Chloromycetin is of low toxicity for man. No significant untoward effects were observed in any of the 84 patients who received the drug in the current studies.—Joseph E. Smadel, Theodore E. Woodward, Herbert L. Ley Jr. and Raymond Lewthwaite, Chloromycetin in the Treatment of Scrub Typhus, *The Journal of Clinical Investigation*, September 1949.

RECENT ADVANCES IN TREATMENT OF HEMATOLOGIC DISORDERS

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Knowledge concerning disorders of the blood, especially their treatment, has progressed at a rapid pace in the past few years. It is the purpose of this communication to emphasize treatment of disorders of the greatest interest to the practitioner of medicine.

ANEMIA

There are four types of anemia for which more or less specific types of therapy are available; consequently, every practitioner should keep them in mind. They are (1) the anemia secondary to various types of chronic infection, for which the sulfonamide compounds, the antibiotic agents and surgery are useful; (2) the iron deficiency anemia, usually due to chronic hemorrhage, arising most frequently from the gastrointestinal tract or uterus, for which iron is specific; (3) macrocytic anemia, which occurs chiefly with pernicious anemia, pregnancy, sprue or a dietary deficiency, and for which various anti-pernicious-anemia types of medication are indicated, such as liver extract, folic acid and vitamin B_{12}, and, finally, (4) the relatively rare types of acquired or hereditary hemolytic anemia, which are benefited or cured by the removal of the spleen. In addition, there are other varieties of anemia which are secondary to such blood dyscrasias as leukemia, Hodgkin's disease and allied conditions. These are improved by other forms of therapy, such as blood transfusions, irradiation and use of the more recently introduced folic acid antagonists, urethane and the nitrogen mustards. These forms of medication benefit the associated anemia indirectly by controlling, at least temporarily, the primary blood disorder to which it is secondary.

TREATMENT OF THE MACROCYTIC ANEMIAS

The macrocytic anemias are important because several specific methods of treatment may be used and a rather highly effective form of therapy, vitamin B_{12}, has recently been introduced. Three preparations may be employed, namely, refined liver extract, folic acid and vitamin B_{12}.

Liver Extract.—Liver extract has the advantage of the longest clinical trial, which has proved it to be of worth. To a patient with pernicious anemia it should be given in doses of 1 cc. (15 units) intramuscularly three times a week for two weeks, or until the red blood cell count is approximately 3,000,000 per cubic millimeter. The dose is then reduced to 1 cc. (15 units) given twice weekly and continued until the red blood cell count reaches normal. The administration is continued in an average dose of 1 cc. (15 units) once every two weeks, in order to maintain the blood at that level. If an infection occurs, the neurologic manifestations do not improve, symptoms reappear or for any reason the red blood cell count is not maintained at a high level of normal, the dose should be doubled temporarily, or increased even more if necessary.

Folic Acid.—Folic acid (pteroylglutamic acid), a complex organic compound present in liver, yeast and

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various other articles of diet, is of known chemical composition and can be made synthetically. It was introduced into clinical medicine by Spies and his associates[1] in 1945. This therapeutic agent is effective when given orally and has the advantage of being tolerated by patients who have become allergic to liver extract. It is effective in all types of macrocytic anemia associated with a megaloblastic bone marrow, including pernicious anemia, sprue, the macrocytic anemia associated with various gastrointestinal disorders, nutritional macrocytic anemia and the macrocytic anemia of pregnancy. When given in doses of 15 mg. daily, either orally or intramuscularly, it will cause the blood in these conditions to return to normal promptly. This level may then be maintained by the administration of 5 to 10 mg. of the drug daily. Although the substance is effective in the treatment of the macrocytic anemia of sprue, pregnancy, gastrointestinal disorders and pernicious anemia, it is contraindicated in the last condition. This is because it does not benefit the neurologic manifestations of that disorder; in fact, some observers[2] have expressed the opinion that it may even exert a deleterious effect on this aspect of the disease.

As there is evidence to indicate that refined liver extract does not always produce a beneficial effect in patients with pernicious anemia of pregnancy[3] and as vitamin B_{12} is known to be ineffective,[4] it is advisable to treat such patients with folic acid.

Vitamin B_{12}.—Vitamin B_{12} (an anti-pernicious-anemia principle of liver was discovered by Shorb[5] in 1947 and demonstrated by West[6] to be effective in the treatment of patients with pernicious anemia. This vitamin, which has been isolated in pure crystalline form, appears as reddish blue crystals containing cobalt. It is an effective form of treatment of pernicious anemia when given intramuscularly in the incredibly small dose of 1 microgram ($\frac{1}{65,000}$ grain, or 0.000001 Gm.) daily. Observations have established that this medication is a "complete" treatment of the disease; that is, it affects favorably the anemia, the lesions of the mucous membranes and the neurologic manifestations[7] when given intramuscularly in an average dose of 1 microgram a day. All indications are that this therapeutic agent may also be employed effectively in single doses of 7 micrograms a week, and it is likely, but unproved, that satisfactory treatment may be given with larger doses at longer intervals.

Early observations have shown that the oral administration of 5 micrograms has no effect on the blood of a patient with pernicious anemia. After incubation with gastric juice, however, the same amount produces a beneficial effect when given orally.[8] Recently Bethell and his associates,[9] at the Simpson Memorial Institute of the University of Michigan, have demonstrated that a daily oral dose of 5 micrograms of vitamin B_{12} combined with 1.5 Gm. of an extract of swine intestine has a striking therapeutic effect, as indicated by an increase in reticulocytes, the red blood cell count and the hemoglobin percentage of the circulating blood. If subsequent observations prove to be as convincing as the preliminary ones, it is likely that the oral administration of vitamin B_{12} combined with such an intestinal extract may become a highly satisfactory method of treating pernicious anemia in the future. At present, however, it must be stated that intramuscular administration of liver extract is the treatment of choice for this disorder, folic acid is contraindicated and vitamin B_{12} has great promise as an effective substance for intramuscular and oral anti-pernicious-anemia medication. Further clinical observations on the therapeutic effects of this vitamin, however, are essential before it can be finally evaluated.

LEUKEMIA

Leukemia is a relatively common, invariably fatal disease, usually considered to be neoplastic. It arises in the blood-forming organs and is characterized by an extensive and abnormal proliferation of the white blood cells and their precursors with infiltration into the various tissues of the body, especially the spleen, bone marrow and lymph nodes. Almost always immature white blood cells, frequently in great numbers, appear in the circulating blood. In practically all instances there is an associated anemia, often of a severe degree.

Since the disease is always fatal, any form of therapy which is now available must be discussed from the standpoint of its palliative value, the effect it may have on the prolongation of life and the promise it provides for future therapeutic developments. Acute leukemia usually terminates fatally within a few weeks to six months from the time symptoms are first observed. Patients with the chronic forms of the disorder survive for an average period of two and a half to three and a half years. Approximately 10 per cent of the patients with chronic myelogenous leukemia, however, live for a period of five to ten years, and the outlook in the chronic lymphatic forms is even better.

The therapeutic agents which are now employed and are known to be of value are as follows: (1) roentgen radiation, (2) radioactive phosphorus, (3) urethane and (4) folic acid antagonists. While the nitrogen mustards have been used with some success in the treatment of leukemia, especially the chronic lymphatic variety, it is now generally considered that they are of value chiefly in treatment of Hodgkin's disease and several allied conditions.

Roentgen Ray Treatment of Leukemia.—For many years the roentgen ray treatment of leukemia has been the standard form of therapy, and properly remains so. A sufficient period has now elapsed, however, to evaluate its ultimate effectiveness. In my opinion, the following conclusions are justified: 1. In treatment of the acute leukemias roentgen ray therapy is valueless, or in fact harmful. Furthermore, the results are usually not satisfactory in patients with the subacute varieties of the disease, nor is such therapy indicated in the subleukemic types. 2. In chronic myelogenous leukemia, total body irradiation ("spray") is the most satisfactory form of treatment; when gross splenomegaly is present, however, localized treatment to the spleen is

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6. West, R.: Activity of Vitamin B_{12} in Addisonian Pernicious Anemia, Science **107**: 398, 1948.
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indicated. 3. In chronic lymphatic leukemia, the localized form of roentgen therapy is the most effective. 4. In the regulation of treatment, experience has shown that two mistakes are made frequently: first, the disease is permitted to relapse too far, and, second, the dose of the roentgen rays is excessive. It is now generally agreed that patients with leukemia should be treated when symptoms are present, or when the total white blood cell count reaches 40,000 per cubic millimeter. In general, an attempt should be made to regulate the dose so that roentgen ray sickness does not occur. Usually this dose has been 50 to 100 r when applied locally, every other day; when the spray form of therapy is used, a dose of 15 to 20 r given daily or every other day is usually satisfactory. 5. Finally, it is agreed that roentgen therapy in the average case of chronic leukemia adds an average of about six months to the patient's life. Of greater significance, however, is that such treatment, when combined with blood transfusions, and with antibiotic therapy to combat infections, controls the patient's symptoms for approximately 80 to 90 per cent of the remainder of his life. It must be considered, therefore, that roentgen irradiation is a worth while therapeutic measure. Never has it been claimed that leukemia can be cured by this or any other form of treatment.

Radioactive Phosphorus.—Radioactive phosphorus (P^{32}), with a half-life of 14.3 days, was introduced into clinical medicine as a form of radiation treatment of leukemia by Lawrence in 1939.[10] This material, when given intravenously in the form of a small amount of sodium phosphate in a dose of 5 millicuries, produces a total body irradiation dose of approximately 30 r. It is known that actively growing cells, such as are present in leukemia, have a high selective uptake of phosphorus. Hence, since this radioactive material emits beta rays, which penetrate only a few millimeters, its injection into the circulation appears to be an ideal method whereby the maximum amount of radiation may be applied to the areas where it will accomplish the greatest benefit.

Radioactive phosphorus is a highly effective means of treatment of chronic myelogenous leukemia and polycythemia vera. Its therapeutic action in cases of Hodgkin's disease, lymphatic leukemia, acute leukemia and multiple myeloma has been disappointing. When given to patients with chronic myelogenous leukemia in a dose of 5 to 7 millicuries intravenously, with the dose repeated in six to eight weeks if necessary, its administration is usually followed by a return of the circulating blood to normal, or approximately so. The indications and the contraindications for the use of this form of therapy are the same as those for the roentgen irradiation. The reason is apparent, as use of radioactive phosphorus is merely a different method of applying radiation to tissues which are growing excessively and without restraint. Its advantages include (1) a wide tissue dispersion, (2) a mild but prolonged effect, persisting for several months and (3) absence of radiation sickness. The disadvantages are the limited supply of the substance and the necessary handling facilities at present, and the variability of the dose. An excessive dose may result in destruction of normal elements of the circulating blood with thrombopenia and associated hemorrhage, anemia and leukopenia.

Use of radioactive phosphorus appears to be the ideal form of therapy for polycythemia vera. Often one or two doses, given four to six weeks apart, of 5 to 7 millicuries reduce the red blood cell count to a normal level, where it remains without further treatment in most cases for a year, and in some cases for as long as three or four years.

Urethane.—Urethane U. S. P. (ethyl carbamate), which is closely related to urea structurally, has a feeble hypnotic effect in man. It is oxidized in the body to urea and carbon dioxide. In doses of 2.0 to 4.0 Gm. daily it is nontoxic, but in some patients continued medication causes nausea and vomiting unless the drug is administered in enteric-coated tablets.

Although urethane was first synthesized over one hundred years ago, it was not until 1946 that Paterson and her associates [11] noted that it caused a reduction in the leukocyte count in patients who were receiving this medicament in treatment for advanced malignant disease. This observation led to its trial and demonstrated value in treatment of leukemia.

The mechanism responsible for the results produced by urethane is not clearly understood, although the drug appears to act as a cellular toxin in vivo. It has been demonstrated that urethane has a definite suppressive action on transplanted and spontaneous leukemia in rats and mice. There is some evidence that it inhibits selectively mitotic cell division of the neoplastic leukemia cells, and by this means achieves its beneficial effect in leukemia. Unquestionably, urethane depresses the bone marrow in patients with leukemia, for if the dose is excessive there are undesirable toxic effects, as evidenced by a striking reduction in the red and white blood cell counts, associated with a diminution in the circulating thrombocytes and a resultant hemorrhagic tendency.

Urethane has been used in the treatment of chronic myelogenous and lymphatic leukemia, the acute leukemias and multiple myeloma. It has been found to be of distinct value in the control of chronic myelogenous leukemia, but it has only a slight therapeutic effect in the lymphatic variety, and is of no value whatever in the acute forms of the disease. Recently Loge and Rundles [12] reported that urethane is effective in some patients with multiple myeloma. My associates and I also have observed gratifying results. Hence, patients with this disorder should be given a trial of treatment with the drug.

In many cases the average total daily dose of urethane sufficient to induce a remission of chronic myelogenous leukemia is 3.0 Gm. The medication should be instituted in doses of 0.3 Gm., in the form of enteric-coated tablets, three times a day and the total daily dose increased by 1 tablet (0.3 Gm.) each day until a maximum number of 10 tablets daily are taken. An effect may be noted within two to four weeks, as indicated by a decrease in the leukocyte count, an increase in the hemoglobin concentration and the red blood cell count, a decrease in the size of the spleen and a distinct improvement in the general condition of the patient.

This form of therapy may be given a trial in patients with chronic myelogenous leukemia who are not acutely ill, and it may also be employed in conjunction with the roentgen treatment in order to prolong a remission after it has been induced by the irradiation. The maintenance dose of the drug, after the white blood cell count has reached normal, varies from 1.0 to 1.5 Gm. daily. Physicians prescribing urethane should bear in

10. Lawrence, J. H.; Scott, K. G., and Tuttle, L. W.: Studies on Leukemia with the Aid of Radioactive Phosphorus, New Internat. Clinics 3: (n.s. 2) 33, 1939.

11. Paterson, E.; Haddow, A.; Ap Thomas, I., and Watkinson, J. M.: Leukemia Treated with Urethane Compared with Deep X-Ray Therapy, Lancet 1: 677, 1946.

12. Loge, P. E., and Rundles, R. W.: Blood 4: 201-216, 1949.

mind that as it may cause an excessive depression of the bone marrow, the use of the drug should be restricted to cooperative patients for whom blood examinations may be made at regular and frequent intervals.

Folic Acid Antagonists.—It is recognized that folic acid is a growth-controlling factor, as indicated by its effect on certain bacteria and on the rate of development of cells in the bone marrow. In 1947 [13] it was discovered that, with relatively minor changes in the chemical structure of folic acid, a group of substances designated as folic acid antagonists could be produced synthetically. These substances have an action directly opposed to folic acid; that is, they are growth retarding.

It is known that leukemic cells contain folic acid, which is thought to be essential to their growth; and it is assumed that this substance may be replaced by a biologically inert antagonist in the metabolic system. This, theoretically, should result in inhibition of the abnormal growth of leukemic cells. This knowledge led Farber and his associates [14] to determine the effect of such preparations in patients with leukemia. In June 1948, they reported on a clinical trial of folic acid antagonists, including one of the most powerful, 4-amino-pteroylglutamic acid (aminopterin®), in the treatment of leukemia. The therapeutic results attained in children with acute leukemia were remarkable and encouraging, as about half the patients had partial or complete remissions. More recently, Dameshek [15] reported that of 35 patients with acute and subacute leukemia, chiefly adults, who received this form of therapy, about one third were benefited. He stated the opinion that the most satisfactory effects are observed in the acute and subacute types of the disease. While other observers have not been so favorably impressed by the action of the folic acid antagonists, nevertheless, it must be admitted that when given to patients with acute and subacute leukemia they will induce remissions in some when all other methods of therapy have failed.

The results in our own series of patients treated with aminopterin® [16] were less favorable than those reported elsewhere. The total white blood cell count was reduced in a majority of patients, and in some instances splenomegaly and evidences of hypermetabolism subsided. Moreover, on discontinuance of the preparation, a recurrence of the leukemic process was almost immediately apparent. It is obvious that this form of treatment is promising, but more carefully controlled studies are necessary before a definitive statement can be made concerning its value. Unfortunately, the margin of safety between the therapeutic and the toxic dose is narrow; hence patients receiving the drug should be under close observation. Among the severe untoward manifestations are ulcerating lesions of the mucous membranes of the mouth and gastrointestinal tract, with hemorrhage.

It is clear that two important facts concerning the folic acid antagonists should be kept in mind. First, they are the only preparations which are known to have induced remissions in a convincing proportion of patients with acute and subacute leukemia. Second, while their action at present is somewhat uncertain, and in some instances is associated with unpleasant and even dangerous untoward effects, it is possible that with the development of new types of antagonists and their purification, together with a better understanding of their dosage, even more gratifying therapeutic effects may be obtained.

Nitrogen Mustards.—The nitrogen mustards (methyl *bis* and *tris* [2-chloroethyl]-amine), employed in medicine are derived from mustard gas (2-chloroethyl sulfide), first used in chemical warfare during World War I.[17] The possibility that they might be of therapeutic value was based on the observation that in animals these preparations produced a striking leukopenia in association with a destructive action on the bone marrow and lymphatic tissue. These findings suggested that they might be of use in the treatment of leukemia, lymphosarcoma and Hodgkin's disease.

Experimental and clinical studies during the past few years have demonstrated that the nitrogen mustards act as cellular toxins which have a selective effect on cancer cells and the more rapidly growing cells of the animal body, such as those in the hematopoietic system. The precise manner in which these agents act is unknown. It has been suggested that their effects are produced by the inactivation of the enzyme system controlling the rate of cellular growth, or that they influence the basic nuclear functions and thereby inhibit mitotic cell division. In some respects the action of these chemicals on the body cells resembles that produced by the roentgen rays.

Numerous clinical reports have appeared evaluating the use of nitrogen mustards in the treatment of various disorders involving chiefly the hematopoietic system. Experience has shown that these substances have a therapeutic effect in the following conditions: Hodgkin's disease, lymphosarcoma, reticulum cell sarcoma, myelogenous and lymphatic leukemia and polycythemia vera. In general, however, the clinical reports are in agreement with the conclusion that these therapeutic agents are of greatest value in the treatment of patients with Hodgkin's disease who have become refractory to roentgen therapy. In such patients, the use of these preparations results in prolongation of life with relief of symptoms for a variable period—from a few weeks to one or more years. In my opinion, it is not certain, as some have claimed, that these therapeutic agents resensitize such patients to the roentgen rays, once refractoriness has developed. In some instances, nitrogen mustard therapy may also produce immediate and dramatic salutary effects in patients with lymphosarcoma and reticulum cell sarcoma.

It appears to be the consensus that nitrogen mustard therapy should be reserved for the treatment of patients with Hodgkin's disease, lymphosarcoma and reticulum cell sarcoma, and then only after all benefit has been derived from repeated use of the roentgen rays. When such a refractory state has been reached, it would be depriving such patients of an opportunity for a further, but often relatively brief, remission to withhold the drug from them.

The nitrogen mustards are given intravenously, with all precautions to avoid venous thrombosis. In almost all cases their administration is followed by anorexia, nausea and vomiting, which may be of a distressing degree. The medication is given in a dose of 0.1 mg. per kilogram of body weight, on alternate days, for

13. Symposium: Effects of Derivatives of Folic Acid on Certain Types of Neoplastic Disease, Tr. New York Acad. Sc., **10**:68, 1948.
14. Farber, S.; Diamond, L. K.; Mercer, R. D.; Sylvester, R. F., Jr., and Wolff, J. A.: Temporary Remissions in Acute Leukemia Produced by Folic Acid Antagonists, 4-Aminopteroyl-Glutamic Acid (Aminopterin), New England J. Med. **238**:787, 1948.
15. Dameshek, W.: Chemotherapy of "Lymphoma" and Leukemia, Bull. New England M. Center **11**:49, 1949.
16. Neligh, R. B.; Bethell, F. H., and Meyers, M. C.: Effect of Pteroylglutamic Acid Inhibitor in Leukemia and Related Disorders, Am. J. Med. **5**:624, 1948.
17. Gilman, A., and Philips, F. S.: Biological Actions and Therapeutic Applications of β-Chlorethyl Amines and Sulfides, Science **103**:409, 1946.

four injections. The total amount administered in any one course should not exceed 24 mg., that is, four injections of 6 mg. each. As this drug affects normal cells to a certain extent, especially those of the hematopoietic system, care should be taken to avoid excessive depression of the red cells and white cells in the peripheral blood. This can be accomplished by observing the level of these cells before each treatment and regulating the dose accordingly.

SUMMARY

The macrocytic anemias, including pernicious anemia, the macrocytic anemia of sprue, nutritional macrocytic anemia and the macrocytic anemia of pregnancy, may be treated with liver extract, folic acid (pteroylglutamic acid) or vitamin B_{12}. Liver extract, given intramuscularly, is the treatment of choice for pernicious anemia, but vitamin B_{12} may prove to be equally effective when administered either intramuscularly or possibly by the oral route when combined with intestinal extract. Folic acid when injected intramuscularly or given orally is a highly effective form of treatment for all varieties of macrocytic anemia except pernicious anemia, for which it is contraindicated because it has no effect on the neurologic manifestations of the disease. This agent is the most satisfactory one in the treatment of the macrocytic anemia of pregnancy, as refined liver extract and vitamin B_{12} are ineffective in many, if not all, patients with this disorder.

The chronic type of myelogenous leukemia is usually best treated with "spray" roentgen irradiation or the use of radioactive phosphorus. Urethane may be given to patients who are not severely ill or in an attempt to prolong a remission induced with roentgen ray therapy. The most effective treatment of lymphatic leukemia is localized roentgen irradiation. The therapeutic agents recommended for acute and subacute leukemias are blood transfusions, antibiotic preparations to combat associated infections, and the folic acid antagonists. The substances last mentioned are the only therapeutic agents which have any specific value whatsoever in such conditions, as they may induce a remission in from 25 to 50 per cent of cases.

The nitrogen mustards are of value in the treatment of Hodgkin's disease, lymphosarcoma and reticulum cell sarcoma, especially after the patient has become refractory to roentgen therapy.

ABSTRACT OF DISCUSSION

DR. ROBERT A. HETTIG, Houston, Texas: In this age of antibiotics striking advances have been made also in the therapy of blood and lymphoid dyscrasias. Chiefly responsible for these advances has been the introduction of several chemical agents which promise not only to increase the versatility and effectiveness of treatment as a whole but to provide research tools by which there may result a better comprehension of the basic mechanisms underlying these dyscrasias. One of the more interesting of these recent therapeutic applications has been the nitrogen mustards. These tertiary alkyl amines offer a fresh approach in the treatment of Hodgkins' disease, lymphosarcoma and polycythemia rubra vera. About two thirds of the patients with Hodgkins' disease who receive nitrogen mustard therapy have shown definite improvement, and in many cases the remissions so produced compare favorably with those encountered following an intelligently planned course of high voltage roentgen ray therapy. Results in treatment of lymphosarcoma have been nearly as impressive, although at times inexplicable failures occur. The exact mode of action of the nitrogen mustards has not yet been clarified. However, it is known that they are powerful inhibitors of cellular mitosis and that inherited chromosomal mutations can be produced by exposure of living germ plasm to sublethal doses of these agents. No other group of chemical substances has been found to have such specificity of action for nuclear chromosomal structures. In this respect the action of nitrogen mustards resembles that of irradiation. What are the advantages of nitrogen mustards over deep irradiation in treating malignant diseases of the blood-forming organs? They are relatively simple to administer and do not require expensive equipment and highly trained technical personnel. Second, because these agents are administered intravenously they are brought into intimate contact with malignant cells regardless of their location. Conventional high voltage irradiation, on the other hand, must be applied to a specific area, and only a fraction of the total body area can be safely exposed during any one course of therapy. Third, some degree of improvement following administration of nitrogen mustard may at times be obtained even in far advanced roentgen resistant cases. The most important disadvantage is the failure of the nitrogen mustards to provide definitive cures. Eventually a refractory state develops, with subsequent loss of beneficial response. Second, the action of these agents is not consistently predictable. Brilliant therapeutic results are not infrequently offset by disappointingly short remissions or complete lack of response.

DR. S. M. GOLDHAMER, Cleveland: Dr. Sturgis' views and opinions represent the consensus of the majority of hematologists today. The author has assumed certain facts on which I know he has had insufficient time to elaborate, and it is to these that I wish to call attention. It is necessary, in order properly to treat the patients, to arrive at a proper diagnosis, and this can be accomplished only by accurate technic. Too often, the laboratory work which is done is performed in a haphazard manner and many of the results which are being looked for are lost as a result of the poor technic which are employed. In order to compensate for this deficiency there has grown up among the workers in the field, that is, the medical practitioners, the use of "shotgun" preparations. The majority of the anemias are specific diseases; they are deficiency diseases which can be treated with specific substances, and it is usually unnecessary to give preparations which contain a multitude of materials and which, of themselves, are not of value in any of the blood dyscrasias that are known. As regards the treatment for the lymphoblastomas, I share the same opinions as Dr. Sturgis. Radiation therapy is undoubtedly the best all-round type of treatment. The nitrogen mustards and anti-folic-acid preparations, radioactive phosphorus and urethane, are of value as therapeutic agents in specific instances, and especially as tools in the research problems for the study of the various blood dyscrasias. However, they are by no means to be considered as cures for any of these diseases. Tomorrow the views of physicians may be entirely different as regards these various substances, and with the introduction of new therapeutic agents we may some day hope to accomplish the object for which we are all seeking, that is, the cure of the lymphoblastomas.

DR. CYRUS C. STURGIS, Ann Arbor, Mich.: I want to add two points. I neglected to mention that radioactive phosphorus, P^{32}, is effective in treating polycythemia vera. I am not at all convinced, however, that it is superior to roentgen therapy, and one rather important question has been raised. It is known that a certain number of patients with polycythemia vera have a transformation of that disease into leukemia and succumb to the latter disease. It occurs spontaneously, but in just what percentage of cases is not known. Some, including Dr. Bethell, my associate, feel that perhaps P^{32}, radioactive phosphorus, increases this tendency. I believe it has not been demonstrated as yet, but that is a possibility. P^{32} can be used to treat polycythemia vera satisfactorily, but I do not believe that it is greatly superior to spray roentgen radiation. Second, urethane, in doses of 3 to 6 Gm. a day, rather large doses, can control the symptoms of multiple myeloma. We missed this effect at first because we gave too small doses, but Wayne Rundles at Duke University has shown conclusively that this drug will control the pain, which is so severe on account of spinal involvement in these patients, will decrease plasma proteins, will cause the plasma cells or multiple myeloma cells to almost disappear from the bone marrow and in some instances will regenerate the bone.

CRITIQUE OF REPORTS OF SURGICAL AND DIETARY THERAPY IN HYPERTENSION

DAVID AYMAN, M.D.
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It seems clear that the complications and mortality of hypertensive vascular disease have not as yet been strikingly decreased, despite the glowing reports of the successful dietary, surgical and other treatments of hypertension. The failure to reduce the complications of hypertension must therefore be due, as some claim, to an inadequate or incorrect utilization of the foregoing treatments by the members of the medical profession or, as others claim, at least in major part due to the weaknesses and therefore failure of the effect of the treatments themselves. My purpose in this paper is to point out a few of the many weaknesses of the studies reported and thereby explain the high incidence of success in the studies, and the high incidence of failures in repeat studies with adequate controls.

The chief reason for the constant arrival and subsequent discard of new treatments for hypertension has been the lack of adequate control studies before and after treatment. Before analyzing these inadequacies in some specific reports, I would like to review some general facts about blood pressure variations which when neglected cause havoc with the interpretations of the effect of treatment.

VARIATIONS OF BLOOD PRESSURE

Many years ago I reemphasized the well known but still neglected fact that the variations of blood pressure levels in essential hypertension is one of the outstanding clinical characteristics of the disease,[1] and as of now, 1949, the clinical characteristics of this disease have not changed. All patients with either mild or severe hypertension have constant variations of blood pressure levels. In general, the upward fluctuations of blood pressure are usually due to emotional reactions, either pleasant or unpleasant; and the drops in levels are associated with emotional relaxation and calmness. The variations may amount to extremes of 100 mm. systolic and 40 mm. diastolic during the course of minutes. A constant state of emotional perturbation may often cause a relatively constant higher level of blood pressure until the perturbation is erased or decreased. Thus, there is no reason why it may not last for days or weeks. A momentary emotional disturbance may cause a rise in blood pressure for only a moment. Thus there is no way of knowing that a hypertensive patient has a basal relaxed level of blood pressure merely by taking repeated blood pressure readings every few minutes until a constant level is attained—one must take into account the emotional state of the patient at the time.

Because of these emotional effects on blood pressure levels, it is useless to choose a brief, one month period of observation to compare with six months of treatment observation immediately afterward. A period of treatment is a period of reassurance to a hypertensive patient, and reassurance will obviously lead to greater emotional calmness and a lowering of blood pressure. Thus any nonspecific treatment will tend to lower blood pressure and relieve symptoms. I have seen many patients whose blood pressure at the first visit may be, for example, 260 systolic and 120 diastolic, and at a second visit, a few weeks later, may be 118 systolic and 80 diastolic after only mild sedation and great reassurance. I have given placebos to hypertensive patients and obtained 80 per cent symptomatic improvement.[2]

Another important corollary of the effect of emotion on blood pressure levels concerns the frequency of patients' visits to the physician.[1] If a patient who has been seen at intervals of about two months is suddenly changed to a schedule of weekly visits, then it is common to demonstrate a drop of blood pressure during the period of more frequent visits. This is due to a greater emotional calmness at the more frequent visits. Yet this scheme of increased frequency of visits is commonly applied by clinical investigators of new drugs or treatment and is a source of error.

There are many other facts of importance in interpreting blood pressure changes: a spell of warm, humid weather often results in lowered readings, so that during the summer months blood pressure is often lower. The blood pressure of patients in the hospital, clinic or office is usually higher than the blood pressure in the patient's home environment when it is determined by a member of the patient's household.[3] The home levels may be as much as 50 mm. systolic and 30 mm. diastolic less than in the clinic. By this home method one may demonstrate hypotensive effects of treatment in the home readings and little or no effect during clinic visits. This is due to the pressor effect of the physician in the office or at the clinic.

DIETARY TREATMENT OF HYPERTENSION

I should like now to turn to the specific forms of treatments and point out some failings in the studies reported that may explain failures on attempts to repeat the results. First, the studies of dietary treatment of hypertension.

The rice diet[4] has received widespread attention and has been followed by patients with and without advice of physicians. Ignoring at this time the problem of the protein deficiency aspect of this diet[5] and its dangers in patients with impaired renal function,[6] I would like to point out some aspects of the reports on the rice diet which have not been adequately considered and critically analyzed.

First, it should be noted that the original papers on the rice diet in 1944 were titled "Treatment of Kidney Disease and Hypertensive Vascular Disease with the Rice Diet." In this and subsequent papers it is evident even on superficial reading that this treatment was carried out principally in patients with acute or chronic nephritis and/or congestive heart failure. It is clear that the rice diet, which is a low sodium, low protein diet, should be most effective in patients with edema or with nitrogen retention. In such cases it has always been common to find improvement in heart size, electrocardiogram and blood pressure levels, whether the patient was on the rice diet, a low sodium, low protein diet, or receiving digitalis with diuretics. It is clearly necessary to discard all such cases in talk-

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2. Ayman, D.: An Evaluation of Therapeutic Results in Essential Hypertension: I. The Interpretation of Symptomatic Relief, J. A. M. A. **95**:246 (July 26) 1930.

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ing about the effects of the rice diet in pure hypertensive vascular disease.

In studies of the effect of the diet on blood pressure in "hypertensive vascular disease without conclusive evidence of 'secondary' renal involvement" [4] results in 28 cases are listed as unimproved and in 37 cases as improved. Of the 37 improved patients, 20 were on the diet a month or less when the paper was written. This in itself is a completely inadequate period of study to decide the efficacy of treatment on the blood pressure of persons with hypertensive vascular disease. As to how long a control period was used before starting the diet, no adequate answer is given in these reports. From personal observation it is known that many patients were started at once or within a few days after arriving at the hospital. It is clear that the majority of such patients, for practical reasons, could not be kept waiting for one to two months before starting the diet, since they traveled long distances to begin the diet rather than to wait for it. The results of the diet on blood pressure are therefore not acceptable because they lack careful, scientific control. Whatever drops in blood pressure were noted are easily explained on the basis of frequent determinations, reassurance, enthusiasm and relaxation. All these psychologic factors lead to emotional calmness and a drop in blood pressure that are apparently due to, but actually occur regardless of, the diet. The same criticism applies to other papers,[7] in which complete disregard of controls is evident by almost complete absence of mention of controls. Perusal of the charts supports this criticism.

In 1945 Grollman and associates reported the effect of the low sodium diet in 6 patients with elevated blood pressure, using "less than 1 Gm. of sodium chloride" in the diet.[8] Since then the low sodium diet has been widely used, yet with but few cases actually reported in the literature. Whatever merit there is in the low sodium diet, credit must be given to Allen's efforts with this diet thirty years ago and to Ambard's work forty-five years ago, although both these investigators believed that they were dealing with a chloride rather than a sodium problem, and they did not use modern methods of control of blood pressure.

In Grollman's 6 cases, 2 patients were observed for three weeks before being given the diet, 2 for twelve days and 1 for fifteen days. It is highly possible that a more prolonged period of observation before beginning the diet might have resulted in a much greater decrease in blood pressure during the control period. The fall in blood pressure from 160 systolic and 108 diastolic to 124 systolic and 84 diastolic in case 1 while the patient was on the diet seems like a significant change, but a like decrease may often be seen without diet and merely by observation. The addition of 20 Gm. of sodium chloride to the diet after a drop in blood pressure was obtained is much greater than the normal intake of sodium chloride and therefore represents an abnormal intake. One must consider the effect of an abnormal sodium intake on the blood pressure. The second good response was shown by a drop from 160 systolic and 110 diastolic to 135 systolic and 100 diastolic, but it was still obviously not normal. In a third case, with only twelve days of control, the blood pressure of the patient dropped from 200 systolic and 120 diastolic to 160 systolic and 100 diastolic. The remaining 3 cases did not show a significant alteration in the blood pressure as the result of the diet. It was felt that results in 2 of the 6 cases were striking. Grollman has not reported a larger series.

A more recent paper [9] has reported the effect of the low sodium diet also in only 6 patients. Here likewise a preliminary control study period of only three weeks was used, followed by only two weeks of the low sodium diet. Although they noted drops of blood pressure, the authors emphasized that the drop was slight. Their charts showed, for example, a drop from 168 systolic and 108 diastolic to 150 systolic and 94 diastolic in 1 case and from 168 systolic and 104 diastolic to 158 systolic and 92 diastolic in another. They also noted that patients on a 4 Gm. sodium chloride intake had a rise in blood pressure when given 15 Gm. This suggests that Grollman's administration of 20 Gm. sodium chloride may cause an excessive rise in blood pressure over that present with a normal intake of sodium chloride.

In all these diets, the effect of striking weight reduction as a cause of decrease in blood pressure could be ruled out only by maintaining the patient's weight. Unfortunately, as all agree, there is much weight reduction with the rice diet. Also, there is usually some weight reduction with the low sodium diet. It is clear that drastic dietary restriction with striking weight loss will themselves lower blood pressure.[10] This, then, is another inadequate control aspect of the reports of dietary treatment of hypertension.

INTERPRETATION OF RESULTS OF SYMPATHECTOMY

In studies on sympathectomy it is apparent again that the glaring defect is the usual brief control period of observation before operation. This is evident in the two outstanding studies on this problem.[11] In both these instances patients were usually given brief preoperative control periods, which often amounted to only a few days and seldom to more than a few weeks. Such brief periods were necessitated by practical reasons. Patients often traveled long distances to have the operation performed and would not be willing to wait around for long periods of observation. Second, in both instances the authors were compelled to make the studies brief because of shortage of bed space, the limitations of personal time and a long waiting list with bookings for months ahead. As a result of such procedure, preoperative methods of study were worked out that would permit large numbers of patients to be studied. In one study lack of bed space required that the sedative tests be carried out often in hotel rooms.

How does such brevity of control effect the interpretations of the results of sympathectomy? It does so in an exceedingly disturbing statistical manner. This will be evident by examination of the accompanying illustration. Let horizontal lines *A* represent the average blood pressure level of a hypertensive patient observed during the course of months or years by the referring physician. In this case they represent an average blood pressure of 180 systolic and 120 diastolic. The patient is then sent for sympathectomy to a large center. In the hospital the various preoperative tests

7. Contratto, A. W., and Rogers, M. B.: The Use of the Rice Diet in the Treatment of Hypertension in Nonhospitalized Patients, New England J. Med. **239**: 531 (Oct. 7) 1948.

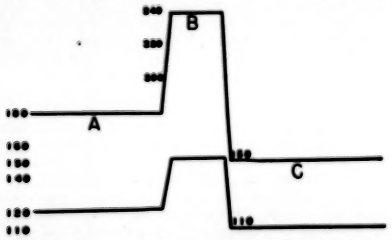
8. Grollman, A., and others: Sodium Restriction in the Diet for Hypertension, J. A. M. A. **129**: 533 (Oct. 20) 1945.

9. Perera, G. A., and Blood, D. W.: The Relationship of Sodium Chloride to Hypertension, J. Clin. Investigation **26**: 1109, 1947.

10. Brozek, J.; Chapman, C. B., and Keys, A.: Drastic Food Restriction, J. A. M. A. **137**: 1569 (Aug. 28) 1948.

11. Peet, M. M.; Woods, W. W., and Braden, S.: The Surgical Treatment of Hypertension: Results in Three Hundred and Fifty Consecutive Cases, J. A. M. A. **115**: 1873 (Nov. 30) 1940. Smithwick, R. H.: Surgical Treatment of Hypertension: Effect of Radical (Lumbodorsal) Splanchnicectomy on the Hypertensive State of One Hundred and Fifty-Six Patients Followed One to Five Years, Arch. Surg. **49**: 180 (Sept.) 1944.

are carried out by the surgical team and lines *B* are obtained. Lines *B* are called the horizontal resting blood pressure levels. In this case lines *B* represent a blood pressure of 240 mm. systolic and 150 mm. diastolic. This level is used as the yardstick of preoperative blood pressure level for later comparison with the postoperative results. How is this incorrect preoperative blood pressure level obtained? According to the published technic, the patient is put to bed for forty-eight hours except for bathroom privileges. After forty-eight hours this horizontal resting blood pressure level is obtained by taking five blood pressure readings at one minute intervals; the average of these five readings are lines *B*. Why do I place these lines higher than lines *A* and state that lines *B* are not correct? I say this because lines *B* represent a five minute interval in the long preexisting hypertensive life of the patient. Most important, these five minutes of preoperative hospital study, as would be true if the interval were two weeks, are extremely tense times for the patient. The patient is well aware that he is being tested to determine whether or not he shall be operated on, an operation that he has often been told may not result in cure; a double operation which, he knows,



Comparison of blood pressure levels obtained *A*, in preoperative study of the patient by the physician for months or years; *B*, during three to ten day preoperative tests by surgical team, and *C*, at postoperative follow-up. Upper and lower lines represents systolic and diastolic values.

involves months of convalescent disability and carries a mortality risk, however small. It is clear that this period of observation is one of great anxiety and therefore, from all experience with the effect of emotion on blood pressure, must result in blood pressure levels higher than the preoperative period lines *A* taken during the course of several years of observation at the physician's office. One year after the operations are performed, the patients return to the surgeon and another five minute resting blood pressure horizontal level is determined and lines *C* are obtained. At this visit, one year after operation, it seems clear that the psychologic state of the patient is quite different from that in the period immediately before operation. The patient has already gone through the long convalescent period; he is active, and he returns to the hospital more as a favor to the surgeon than for treatment; he is rather nonchalant about the tests. He will therefore have a much more relaxed, calm emotional state, leading to the lowest possible levels in a hospital. Thus it is apparent that the preoperative five minute study is carried out when the highest levels would tend to exist as a result of great emotional perturbation and that the five minute postoperative study is made when blood pressure levels would tend to be lowest as a result of greater emotional calmness. The surgeon then concludes that the difference between lines *B* and *C* represents the effect of operation. Actually, the surgical effect of operation should be determined by comparing lines *A* and *C*. If, as I have arbitrarily indicated, lines *A* are 30 mm. systolic and 10 mm. diastolic higher than *C*, there has been little improvement in blood pressure level as a result of operation. However, the surgeon would list the case as one in which *C* is 90 mm. systolic and 40 mm. diastolic less than *B*, and would publish the data as indicating that this patient was improved to that extent. However, back in the home town of the patient the family physician will note only a slight difference between the preoperative and postoperative levels of blood pressure. Unfortunately, the preoperative data of the referring physician is seldom utilized by the surgeon for his published data on results. This in my opinion is the glaring error of surgical statistics of improvement in blood pressure levels. If the operation resulted in constantly normal blood pressure in the majority of patients, then one would not be too concerned about the absence of proper control levels. Unfortunately, less than 10 per cent of hypertensive patients subjected to sympathectomy achieve a truly normal blood pressure level, and therefore these criticisms are necessary.

CONCLUSION

I hope that it is not concluded that I believe dietary or surgical therapy to be useless in hypertension. I have seen an occasional, definite, moderate improvement in patients on the rice diet and low sodium intake and I have observed a more frequent response to sympathectomy. My sole purpose in this paper has been to point out some of the reasons why I do not obtain the results claimed by the authors of such studies when I carry out their therapeutic measures in a controlled manner. It may explain to others their own apparently successful as well as unsuccessful experience.

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ABSTRACT OF DISCUSSION

DR. FREDERICK M. ALLEN, New York: Most physicians remain unaware that the Allen-Sherrill investigation in 1922 included: the first large statistics of dietotherapy in hypertension (with due consideration of protein, weight, psychic and other influences); the first adequately strict exclusion of chloride, bicarbonate and other sodium salts, consequently the first account of salt-deficiency symptoms and precautions against deaths such as recent authors report; the first classification of refractory cases and notice of ultimate benefit in many of them; the first recommendation for retinitis, eclampsia and congestive heart failure, and the first clear concept distinguishing between symptoms and specific disease controllable through a specific factor. The biologic relation of salt to blood pressure and vascular tone is proved beyond question by: (1) abundant confirmations, since my clinical experiments in 1920, that ingestion of salt raises blood pressure in normal and hypertensive animals and persons; (2) causation of experimental chronic hypertension with adrenal and pituitary hormones, particularly in association with salt (Selye); (3) the converse demonstration, which I first furnished, that the profound vascular atony of shock demands sodium salts, not the plasma proteins of the academic authorities; (4) Kempner's recent regimen, though his scientifically unfounded ban on protein and condiments hinders the necessary permanent dieting, which is simple with the diets described in my book (1925). He is now where I was in 1922, with a four year experience, the same benefits and the identical proportion of refractory cases, namely, 30 per cent. My statistics might have been decisive,

with a unique material of several thousand cases during thirty years, had financial aid been obtainable. My patients mostly die from coronary or cerebral consequences of arteriosclerosis which antedated treatment. Impressions or statistics of lengthened life, though genuine, are debatable because of natural variability of cases. But about 50 per cent of cases of hypertension ordinarily terminate in congestive heart failure; also, retinitis, claudication, angina and uremia are frequent. Though not all curable after occurrence, my experience teaches that all these are prevented by saltless diet. Since sodium chloride is merely the principal, not the sole, factor, rare exceptions may prove the rule. But my challenge to those who talk about fixed evolution of essential hypertension is that in thirty years I have not seen the mentioned complications arise on continuous saltless diet, even in "refractory" cases.

DR. KEITH S. GRIMSON, Durham, N. C.: Blood pressure alone, as Dr. Ayman has pointed out, may be a variable and occasionally deceiving index. Unfortunately, other methods of evaluating patients also are not entirely satisfactory. Few medical studies of conventionally treated patients have described five year results in a complete study group. Only with surgical measures is there the unique advantage that each patient treated remains treated, barring some degree of sympathetic nerve regeneration. Therefore, it is possible for me to set up a program of study for each surgical patient, using individual master charts and recording data for long periods before and after operation. Examples presented deal with results of near total sympathectomy, which includes denervation of head, heart, lungs and upper part of the body in addition to the sympathectomy of the splanchnic area accomplished by the Peet, Smithwick, Poppen and other procedures. This operation, total thoracic and partial to total lumbar sympathectomy, splanchnicectomy and celiac ganglionectomy, was started in 1940. Master charts reveal trends of blood pressure and permit approximate grouping according to whether there is (*a*) reduction to near normal values, (*b*) significant reduction but not to normal or (*c*) no definite reduction. Examples show the preoperative blood pressure readings for at least several months and usually several years. Emphasis is placed on the average of readings obtained during hospital admissions. These readings when graphed demonstrate that during the one and one-half to nine year follow-up period 31 of 113 patients have maintained reduction of blood pressure to near normal. Forty-three have reduction of 60 mm. of mercury or more systolic and 40 or more diastolic but continue with elevation of blood pressure, and 23 have had no significant reduction. Office readings usually obtained by the patient's physician reveal a similar change and a more conspicuous arrest of the preoperative upward trend. Most important, however, is the actual survival rate. Of this group of patients formerly moderately or seriously disabled with progressive forms of hypertension, 85 per cent remain alive and with few exceptions normally active at present, the average follow-up period being three and one-half years. Symptoms of hypertension are usually relieved, and hypertensive retinitis when present has disappeared. Significant improvements evidenced by electrocardiograms or reduction of heart size, however, have only occasionally occurred.

DR. DAVID AYMAN, Boston: Whatever merit there is in the low sodium diet, Dr. Allen deserves credit for its propagation. My own feeling is that it has no effect except in an occasional case. Sympathectomy has a definite place in the treatment of hypertension and a definite effect on the blood pressure of some hypertensive persons. Unfortunately, by the standard, more popular surgical method rather than Dr. Grimson's more extensive method, the blood pressure does not drop to normal in more than 10 per cent of cases. When it drops to normal, one does not have to worry about controls, but when it does not drop to normal and is somewhere around 160 as compared to 200, one has occasion to wonder whether that 160 really means a therapeutic drop, unless there has been long, careful preoperative control. Occasional visits of the patient to the physician's office are not sufficient, in my experience, to use as control. Again, I must say that the rice diet in my experience has been useless except in an occasional patient.

PARANASAL SINUSES IN RELATION TO SKULL INJURY

Subsequent Defects and Their Correction with Tantalum Plates

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For many years various types of materials have been employed in the repair of skull defects. The most recent substance to be used is the element tantalum. The contributions of Olsen,[1] Pudenz,[2] Burke,[3] Fulcher,[4] Robertson,[5] Baker,[6] Robertson and Peacher,[7] Schnitker and McCarthy,[8] Woodhall and Spurling,[9] Turner,[10] Gardner,[11] Echols and Colclough [12] and Bradford and Livingston [13] have done much to popularize the use of this element for such procedures both in military and civilian practice.

Early débridement, skilful medical care and the use of sulfonamide drugs and antibiotics have been instrumental in saving large numbers of patients with compound depressed skull fractures. Of primary importance in the treatment of these patients is the débridement of the soft tissues, including the brain, dura and scalp. At this time a decision must be made as to whether the skull defect should be repaired initially or subsequently. It is the purpose of this paper to present some aspects of this problem from the otorhinolaryngologists' standpoint particularly when the injury to the skull involves the paranasal sinuses. Immediate plastic repair may be contraindicated and often must be deferred until adequate surgical care of the frontal and ethmoidal sinuses has been accomplished. Such methods of treatment will tend to minimize complications. Neurosurgeons and plastic surgeons have been actively engaged in the treatment of these conditions, and their records of success speak for themselves.

Lewin and his co-workers [14] reported on a series of 128 patients. Their results show that in 7 per cent infection developed around tantalum plates that were not in relation to the frontal sinuses. In those patients in whom repair of the skull defect included repair of the frontal sinuses the complications were 9 per cent greater. White [15] stated that most of the difficulties arising from the use of tantalum plates have developed

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10. Turner, O. H.: Repair of Defects of the Skull, with Special Reference to the Periorbital Structures and Frontal Sinus, Arch. Surg. **53**: 312-326 (Sept.) 1946.

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15. White, J. C.: Late Complications Following Cranioplasty with Alloplastic Plates, Ann. Surg. **128**: 743-755 (Oct.) 1948.

in the repair of defects in the frontal bone, especially when the frontal sinuses have been involved. Lane and Webster [16] reported in a survey of Veterans Administration hospitals that fifty-two tantalum plates were removed because of subsequent infection. Twenty-six, or 50 per cent, of the plates had been inserted in cases in which there were defects of the frontal area. In 18 of these 26 cases, or 35 per cent of the 52 cases reported, cranial defects involved the frontal sinuses.

The frequent incidence of complications from the use of tantalum plates in the frontal areas is probably due to the following conditions:

1. The shape and contour of the frontal areas are such that it is mechanically difficult to anchor and stabilize a tantalum plate to prevent slipping.
2. Pressure necroses may tend to erode areas of skin, particularly if there is loss of the orbital ridge.
3. The frontal area is prone to subsequent trauma.
4. Most important, if the tantalum plate encroaches on an unablated frontal sinus, there is danger of local or intracranial infection occurring at any time during the life of the patient.

In 1945, in a discussion of the paper by Woodhall and Spurling,[8] Joseph E. I. King stated that defects in or about the frontal sinuses should not be repaired unless the entire sinus is completely obliterated, and the

Fig. 1.—The patient (M.S.) was injured in a jeep accident in 1944. Loss of the outer table frontal sinuses and of soft tissue may be noted.

mucous membrane eliminated. Robertson and Peacher [7] reemphasized the necessity of removing the mucous membrane of the frontal sinus and occluding the ostium of the nasofrontal duct to avoid a potential source of infection. One of their patients with an extradural pneumatocele was unsuccesssfully retreated on two occasions; the condition was finally controlled after scarification of the nasofrontal duct. Spurling [17] stated that in cases involving these defects the nasofrontal duct should always be cauterized in order to seal off the nasal chamber from the frontal sinus area. In 1945 Canfield [18] stressed that thorough débridement of the wound is essential and that this demands that the paranasal sinuses be completely cleaned and drainage provided. Kazangian and Holmes [19] emphasized that in repair of cranial defects involving the frontal sinuses the surgeon must be careful not to enter the nasofrontal duct and the area of the nose. If this is done they recommend the swinging of a flap of soft tissue from adjacent structures to close the duct. In an attempt to wall off the frontal and ethmoidal sinuses, interposing fascia lata, pericranium or frontalis muscle grafts have been used between the sinuses and the nose and even between the sinuses and the cranial cavity. Maxwell [20] (with whom I have collaborated) has shown that if the mucous membrane of the frontal sinuses of dogs is transplanted to various other tissues, epithelial cysts may form within the transplants. In case 6 of the series reported here similar cyst formation was noted in an apparently ablated frontal sinus.

16. Lane, S., and Webster, J. E.: A Report of the Early Results in Tantalum Cranioplasty, J. Neurosurg. 4:326-339, 1947.
17. Spurling, G.: Personal communication to the author.
18. Canfield, N.: Primary War Injuries Involving the Nose and Sinuses, J. Otol. & Laryngol. 60:458-460, 1945.
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OPERATIVE CARE

It is evident that some definite surgical principles should be followed for the care of the frontal and ethmoidal sinuses before plastic repair is accomplished, if complications are to be minimized.

From the otolaryngologists' point of view these principles are:

1. Exenteration of the ethmoidal sinuses and ablation of the frontal sinuses should be done as necessary. If this is not feasible during the original débridement, it must be done before plastic repair is contemplated. Frontal sinuses that have large superior-inferior, mediolateral and anteroposterior dimensions may have large ethmoidal labyrinths associated with them. When the condition of the patient warrants sinus operation, a hair line coronal incision should be employed, with secondary Lynch or Sewall incisions as necessary.
2. Ablation of the frontal sinuses may be accomplished successfully from above in instances where the anteroposterior diameter of the sinus is small, provided the nasofrontal duct can be adequately scarified and accessible ethmoidal cells can be exenterated and their mucous membrane removed.

The optimum time for care of the frontal and ethmoidal sinuses should be determined by the patient's condition. Extensive damage to the brain associated with shock contraindicates any initial extensive care of the sinuses. Once sinus operation is accomplished, one should wait at least six months before attempting final plastic repair.

The surgical approach to each case of injury and defect involving the frontal and ethmoidal sinuses must be individualized. This is illustrated in the case of M. S. (fig. 1), an infantry soldier treated at O'Reilly General Hospital (Springfield, Mo.). He had been injured in a jeep accident in 1944, incurring an extensive loss of superficial and deep tissues in the region of the frontal sinuses. In spite of chemotherapy and administration of antibiotics, suppuration of the remaining portion of the frontal sinuses and of the ethmoidal labyrinths persisted. It was only after a complete external exenteration of the left ethmoidal labyrinth through a Lynch incision and ablation of the remaining frontal sinuses that healing occurred. A full thickness graft could then be swung downward with a view to subsequent plastic repair.

A unique opportunity has been afforded at the Veterans Administration Hospital in San Francisco for the study of patients with late complications from the use of tantalum plates in the frontal sinus areas and of other patients in whom the surgical principles outlined here have been followed. All the patients reported were admitted to the neurosurgical service [21] of this hospital.

REPORT OF CASES

Case 1.—R. D., aged 27, in January 1945 sustained a compound depressed skull fracture of the frontal bone involving the left frontal sinus (fig. 2). Within a few hours a frontal wound

20. Maxwell, J. H.: Chronic Proliferative Osteomyelitis of the Skull, Ann. Otol., Rhin. & Laryng. 55:719-742 (Dec.) 1946.
21. Dr. O. W. Jones, director of the neurosurgical service, aided in the preparation of this manuscript; Dr. Lawrence Arnstein, senior resident cooperated in this work.

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was débrided and closed. In September 1946 a 3 by 4 cm. tantalum plate was placed over the defect. On March 1, 1949 the patient complained of headaches and had a generalized convulsive seizure. He was admitted to the hospital, where tenderness and edema were demonstrated over the plate. A diagnosis of meningitis was established. Because of roentgenologic evidence of possible infection of the posterior table of the frontal sinuses and because of the remaining unablated frontal sinuses, the tantalum plate was removed through a hair line coronal incision one week after admission. At operation a small amount of thick pus was found in the region of the unablated left frontal sinus. There was a defect of the posterior wall of the same frontal sinus directly into an old area of dural tear overlying an arachnoidal cyst. The mucous membrane lining of the remaining portion of the frontal sinuses and of the orbital ethmoids was hyperplastic. The dura was repaired, a portion of the orbital ethmoid sinuses exenterated and the remainder of the frontal sinuses completely ablated from above. The tantalum plate was not reinserted at this time.

The patient's convalescence from the meningitis and the operation was uneventful except for a cerebrospinal rhinorrhea of one week's duration.

It is believed that because the frontal sinuses were small, particularly in the anteroposterior dimension, ablation from above will be successful. The patient had the usual supportive care. At operation direct extension of the infection from the sinuses to the meninges was demonstrated. After a six month period of waiting it is expected that this pathway will be sufficiently sealed off to permit reinsertion of a tantalum plate. If at subsequent surgical intervention there is evidence of infection of the mucosa of the frontal or ethmoidal sinus, an external ethmoidectomy, followed by another waiting period, will be the procedure of choice.

CASE 2.—R. A., aged 29, was involved in enemy shellfire Dec. 23, 1944. He suffered a penetrating wound of the midfrontal region with a compound frontal skull fracture and lacerations of the dura and the left frontal lobe of the brain. The missile went into the left orbit, causing a massive intraocular hemorrhage of the left eye. The next day débridement was done. On Jan. 16, 1945 the left eye was enucleated. About a month later a tantalum plate was inserted over the 4 cm. defect in the frontal bone, and satisfactory prosthesis for the left eye was fitted. The patient convalesced from these procedures satisfactorily and was well until Dec. 26, 1947, at which time he had an infection of the upper part of the respiratory tract with a temperature of 103 F. Classic signs of meningitis developed, and the patient was hospitalized three days later. Under appropriate therapy he showed remarkable improvement, and he was discharged from the hospital early in 1948. Subsequent follow-up examinations have shown no changes.

Although in this case the tantalum plate impinged on the frontal sinuses, it was not removed when meningitis developed because of the rapid recovery and the lack of roentgenologic evidence of frontal sinusitis and local reaction about the plate. If the infection travels through the frontal sinuses directly to the meninges, it is logical to assume that it will possibly wall off the frontal sinus pathways and thus produce a barrier against further latent infection. However, if the walling-off process is not adequate, it is conceivable that there may be a repetition of complications. This would possibly necessitate removal of the plate, ablation of the frontal sinuses and exenteration of the ethmoidal sinuses.

CASE 3.—R. D., age 30, suffered a gunshot wound of the left frontal region while in combat in January 1945. He lost the entire frontal bone as well as the left eye and was immediately operated on in the field. Later the patient noted a pronounced loss of vision in the remaining eye. A series of plastic operations was carried out, and finally a tantalum plate was inserted over the entire frontal region and the left and right supraorbital ridges. A prosthetic appliance was fitted in the left orbit. This soldier was rehabilitated and given a Seeing Eye dog. On Dec. 23, 1946, while walking along a street, he was struck by an automobile. He was treated elsewhere and was admitted to the Veterans Administration Hospital five days later. On arrival he was in deep coma. The tantalum plate was obviously bent. Conservative treatment was instituted, and on Jan. 30, 1947 the tantalum plate was removed through a hair line coronal incision. Infected hyperplastic mucous membrane was observed to extend into the remnant of the frontal sinuses. Flaps of pseudomembrane 2 sq. cm. in diameter were mobilized and sutured to the supraorbital tissues. A catheter was placed in the nose through the right nasofrontal duct and removed twenty-one days later. On April 9 a plastic repair of the skin of the forehead was done because of two areas of pressure necrosis. On June 28 previously inserted tantalum foil was removed through the same hair line coronal incision and a tantalum plate reinserted. At a point above the left eye a 2 mm. mucocele-like area was present, which contained pus. Fascial tissue was sutured in this region, walling it off. In order that the tantalum plate would not impinge on this area, one fifth to one sixth of the plate was cut off. The plate was then held in position with tantalum screws. The postoperative course was entirely uneventful.

When this plate was originally inserted, the frontal sinuses were not completely ablated. There had been apparently no difficulty with the tantalum plate until severe trauma to the head occurred. At the operation which followed the severe reinjury, débridement and removal of the tantalum plate were carried out. The patient was discharged from the hospital in September 1947; recent examination showed him to be in satisfactory condition.

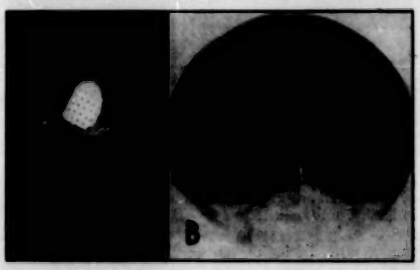

Fig. 2 (case 1).—*A*, the tantalum plate encroaching on both frontal sinuses is seen. This plate had been in situ thirty months before meningitis developed. *B*, the tantalum plate has been removed through a hair line coronal incision, and the frontal sinuses have been ablated and the orbital ethmoids partially exenterated from above. A waiting period of six months will be observed before a tantalum plate will be reinserted. This roentgenogram was taken after the patient had recovered from meningitis.

CASE 4.—H. M., aged 39, was injured over the left frontal region by shrapnel in the Normandy Campaign on June 27, 1944 (fig. 3). Débridement of the wound was done on the same day. In September a tantalum plate was inserted over the skull defect. During the next four years the tantalum plate was removed and reinserted on four different occasions at various Army and Veterans Administration hospitals. Reasons given for removal were: swelling and infection about the plate, purulent drainage from a sinus tract in the region of the left frontal sinus, looseness of the plate and bending of the plate from trauma. He entered the Veterans Administration Hospital in San Francisco on Oct. 1, 1948 because of fluid collection under the plate. Examination showed that the tantalum plate was loose beneath the scar over the left frontal area. On December 14 the tantalum plate was removed for the fifth time through a hair line coronal incision. Fluid was found around it, and there was a 1 cm. communication into the frontal sinuses which contained an empyema. The frontal sinuses were ablated, and the scalp was closed over tantalum foil. Because of incomplete exenteration of the ethmoidal sinuses, a left external ethmoidectomy was done on Jan. 25, 1949. Convalescence was uneventful, and the ablation appeared satisfactory. The patient was instructed to return to the hospital for reinsertion of the tantalum plate after a six month furlough.

It is believed that the complications accompanying the use of a tantalum plate in this case can be attributed to the

communication with the unablated frontal sinuses which contained the empyema. This pathway was demonstrated at operation. Because of the nature of the sinusitis and the large size of the frontal and ethmoidal sinuses, ablation from above was not satisfactory, and only after external ethmoidectomy was it accomplished.

The preceding cases, in which injury as well as infection was the predominating feature, demonstrate

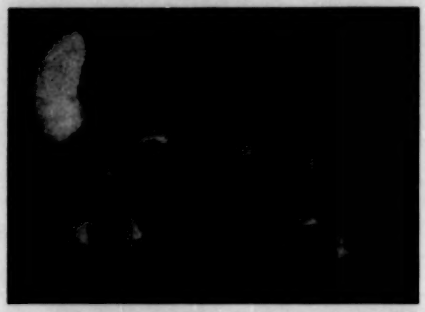

Fig. 3 (case 4).—*A*, a tantalum plate had been removed and reinserted on four different occasions during a four year period. Arrow denotes a communication from the frontal sinuses to the plate. An empyema of the frontal sinuses was discovered at operation. *B*, the tantalum plate was removed for the fifth time. The frontal sinuses were ablated successfully from above only after external exenteration of the left ethmoidal labyrinth was done through a Lynch incision.

complications arising from tantalum plates encroaching on unablated frontal sinuses.

The next 4 case reports illustrate surgical therapy of the frontal and ethmoidal sinuses before plastic repair is finally undertaken.

Case 5.—H. C., age 39, was admitted to the hospital on Aug. 3, 1947. During the last week of June 1947 this patient was in a jeep accident at Guam, receiving a compound depressed skull fracture of the left frontal area. A minimal débridement was done at that time. Two weeks prior to his present admission he bumped his head, and within a few hours a swelling was noted over the site of the old injury. He became toxic and mentally confused. Several loose fragments of bone could be demonstrated by probing through a small draining sinus. On the day after admission a hair line coronal incision was made and infected bone was found in the old cranial defect. Thorough débridement was done. The left frontal sinus was entered, and clotted blood was found. There was no evidence of infection. The anterior bony wall and the mucous membrane were completely removed from the left frontal sinus, and the accessible ethmoid cells were exenterated. After the operation the patient's condition was not satisfactory, and on August 14 an abscess of the left frontal lobe was drained. The postoperative course was stormy, but the patient survived. On Nov. 16, 1948 a large tantalum plate was inserted through the reopened hair line coronal incision. Follow-up examination showed that the patient was progressing satisfactorily.

This case illustrates late débridement and associated complications. At no time during this patient's illness were the paranasal sinuses considered contributory to his serious condition. Ablation of the left frontal sinus from above was considered feasible because of the small size of the frontal sinus. Time proved this contention correct, for fifteen months later a tantalum plate was inserted without difficulty.

Case 6.—W. D., age 27, incurred a compound fracture of the frontal bone on Oct. 18, 1947, during an automobile accident (fig. 4). Débridement was done, and the wound healed by primary intention. He was admitted to the Veterans Administration Hospital one year later. He had a large defect in the midline of his forehead which was pulsating in character and bulged on straining. Clinically it was believed that the frontal sinuses had been completely ablated. On Dec. 18, 1948 an attempt was made to insert a tantalum plate into the defect through a hair line coronal incision. At the upper margin of the frontal sinuses and not connected with any other portion of either sinus, a mucous membrane cyst containing a mucopurulent discharge was discovered. It was removed and the bone about it saucerized. Culture of the fluid in the cyst produced a pure strain of Staphylococcus aureus (beta hemolyticus). The tantalum plate was not inserted at this time, but tantalum foil was left in the wound between the galea and the dura. Convalescence was uneventful. Follow-up examination showed the patient to be well.

This case illustrates the dangers of leaving mucous membrane of the frontal sinus, namely, cyst formation and the presence of viable organisms one year after the original injury and débridement. A waiting period of six months will be observed before this defect will be repaired with a tantalum plate.

Case 7.—H. S., age 27, was injured in May 1947 in a motorcycle accident. Frontal skull injuries were débrided and scalp lacerations closed soon after injury. His convalescence was uneventful, and he was discharged from the Navy in August. The patient reentered the hospital in April 1949, at which time a tantalum plate was inserted over the bony defect through a hair line coronal incision. None of the paranasal sinuses was opened, nor was any mucosa encountered. The plate fitted well. There was some edema over the left supraorbital ridge postoperatively, but this disappeared after conservative treatment.

This patient should progress satisfactorily, because complete and thorough ablation of the frontal sinuses and partial exenteration of the ethmoidal sinuses were done at the original débridement. These procedures were carried out successfully, no doubt because the patient's intracranial damages were not too extensive.

Case 8.—B. R., age 25, required external surgical treatment of the frontal sinuses in 1937 because of suppurative sinusitis. In December 1943 she complained of severe headaches. The following month an extradural abscess was drained through a horizontal incision in the forehead, and osteomyelitis of the frontal bone was found. Her recovery was uneventful. In April 1945, while in the Army, she was in a jeep accident,

Fig. 4 (case 6).—*A*, clinically it was believed that the frontal sinuses had been adequately ablated at the primary débridement. Arrow denotes area where the mucous membrane cyst remained. It contained viable organisms one year after injury. Ablation would have been satisfactory had it not been for the cyst. *B*, arrow shows where bone about the cyst was saucerized. The cyst was removed. Six months are to elapse before a tantalum plate is to be inserted over the defect.

striking her head. In July 1946 an abscess of the scalp was drained. In August she entered the Veterans Administration Hospital, where a draining sinus of the scalp was curetted. After this, active infection subsided. A diagnosis of chronic osteomyelits of the frontal bone associated with proliferative osteitis was made. With a view to removing the frontal bone at a later date, an ablation of the frontal sinuses and external ethmoidectomy was done on Jan. 27, 1948. Conva-

lescence following this operation was uneventful. Ablation has been successful.

The sequence of events in this case, although primarily not due to injury, is described since it illustrates surgical care of the frontal and ethmoidal paranasal sinuses before radical surgical removal of the frontal bones. If the old proliferative osteomyelitis is quiescent, then the tantalum plate will be inserted when the frontal bone is removed.

SUMMARY

Cases are herein reported which demonstrate that tantalum plates encroaching on unablated frontal sinuses may carry inherent complications not only to local but to intracranial tissues as well. In some patients trauma to the tantalum plates was instrumental in initiating complications. Surgical therapy of the frontal and ethmoidal paranasal sinuses is described. One case illustrates the sequelae of leaving isolated bits of frontal sinus mucosa.

CONCLUSIONS

1. From the otorhinolaryngologists' viewpoint it appears that complete ablation of the frontal sinuses and adequate exenteration of the ethmoidal labyrinth or labyrinths should be recommended in every case in which an alloplastic graft, such as tantalum, is to be employed.

2. Such ablation is recommended even if at original débridement there is no evidence of suppuration within the sinuses and regardless of the use of sulfonamide drugs and antibiotics. The use of these drugs may give a false sense of security and, although infection is prevented early, complications may occur later.

3. The frontal sinuses should be ablated either at the time of original débridement, if the condition of the patient permits, or at subsequent operation. Large frontal sinuses with extensive orbital ethmoid sinuses cannot, as a rule, be successfully ablated from above. The operation of choice in such cases is ablation of the frontal sinuses through a hair line coronal incision, the ethmoids being exenterated through a second incision of the Lynch or Sewall type. An attempt to ablate small frontal sinuses from above is feasible in selected cases.

4. If ablation of the frontal sinuses is carefully performed and at least six months intervene before insertion of the alloplastic graft, later complications can be lessened and perhaps avoided in most cases.

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ABSTRACT OF DISCUSSION

DR. I. JEROME HAUSER, Detroit: We are indebted to Dr. Work for his masterful presentation on the repair of cranial defects that involve the sinuses. This paper is important especially in our particular branch of medicine because it shows another form of surgery that we, as otorhinolaryngologists, should be doing, rather than leaving it entirely to the neurosurgeons as is the common practice. Repair of a defect in the vertex of the skull with a tantalum plate is a simple surgical procedure, but when the defect involves the frontal sinus, and possibly the orbit as well, it becomes a highly technical and difficult operation. It is difficult for several reasons. First, the cosmetic result is of paramount importance; the forehead, in contrast to the rest of the head, is not covered with hair, and any asymmetry of the supraorbital ridges or of the lateral wall of the orbit and zygomatic process, which give contour to the side of the head, is readily visible. Second, loss of tissue, especially the temporalis muscle and possibly the orbital contents, with the resultant contracture, adds to the difficulties of repair. Third, and most important, the incidence of infection in the repair of defects involving the sinus areas, as Dr. Work has pointed out, is much greater than it is elsewhere in the skull. It is especially in the handling of this latter problem that rhinologists must play a part. It is my opinion, formulated from an experience gained at a combined neurosurgical, plastic surgery and ophthalmologic center throughout the war, that it is a mistake to repair a defect of the frontal sinus with tantalum or any other inert substance as long as there is any possibility of future infection. If any part of the sinus cavity remains, sooner or later, perhaps not for years, infection may occur in it, with resultant infection about the plate covering the defect. If this is correct, it is absolutely necessary to ablate the frontal sinus before repairing the defect with a tantalum plate. I do not believe that walling off the sinus with fascia lata, pericranium or muscle grafts gives adequate protection against infection in future years. In ablating the sinus every bit of sinus mucosa must be destroyed, and any communication between the sinus and the nose must be obliterated. If there is any infection in the ethmoid, the cells should be exenterated, preferably through an incision overlying the ethmoid labyrinth. Dr. Work was correct when he stated that six months should elapse between the sinus operation and the insertion of the tantalum plate. This is not too long a period in which to observe patients who have undergone radical sinus operation in order to be certain that all infection has been eliminated.

DR. EDGAR M. HOLMES, Boston: All otolaryngologists who have dealt with recurrent empyema of the frontal sinus or osteomyelitis of the frontal bone are cognizant of the fact that infections are prone to recur in sinuses which are not obliterated, necessitating reoperation and drainage. This danger emphasizes the surgical principle stated by Dr. Work that sinuses must be obliterated prior to plastic repair and that this procedure invariably includes an anterior ethmoidectomy to make the obliteration complete. I cannot overemphasize the necessity for the long waiting period, in the hope that during that period it will be possible to guard against the formation of mucoceles and pyoceles and to watch for signs of intracranial complications. Dr. Work's paper dealt solely with the correction, utilizing tantalum plates, of skull defects in relation to paranasal sinuses. Tantalum is a good material to employ in many cases, particularly where it is flush with surrounding bone. However, we should not forget that in so doing we have buried in the tissues a nonviable material which at some later time may set up a foreign body reaction and which, should this happen, the tissues will attempt to extrude. If a viable material such as bone is employed, it becomes an integral living part of its host, and, if the danger of communication with the nose is excluded, it is the ideal material to use. It lends itself well in restoration of the supraorbital ridge and most frontal sinus defects. The use of cartilage has its advocates and is satisfactory in chosen cases. When a large defect is encountered, a decision must be made between viable and inert materials. Bone is always the best material functionally, but tantalum may be easier to use and may give better cosmetic results. I am interested in learning whether Dr. Work uses his coronal incision if there are preexisting scars in direct contact with the field? The custom of inserting tantalum foil in the wound between the galea and the dura is a good procedure at the time of débridement. It would have been a tremendous help if it had been possible to use it in some of the cases of osteomyelitis which have come to my attention postoperatively. Dr. Work mentions four probable causes of complications from the use of tantalum plates. Two of them, the shape of the plate and pressure necrosis, are purely mechanical problems. Both a poorly stabilized plate and pressure necrosis over a sharp edge of the plate are usually due to faulty construction and fitting of the plate.

DR. WALTER P. WORK, San Francisco: One should emphasize that, as otolaryngologists, we do not have to use tantalum or any other substance and we do not have to be plastic surgeons or neurosurgeons, but we can certainly advise the plastic surgeons and the neurosurgeons about care of the paranasal sinuses after injury. Tantalum foil inserted between the galea and the dura is appropriate in certain cases, particularly since, at subsequent dissection, the scalp may be turned forward in this line of cleavage with little danger of tearing the dura. Coronal incisions were used routinely in all cases reported and are considered the procedure of choice.

CHRONIC ULCERATIVE COLITIS AND CARCINOMA

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With the recurrent emphasis placed on the detection of cancer and on the widespread dissemination of information regarding cancer, it was thought apropos to review once again the records of those patients with chronic ulcerative colitis in whom carcinoma has developed since our last report [1] five years ago.

In a disease process such as chronic ulcerative colitis, remissions and exacerbations of the disease are constantly forcing efforts of repair and formation of new tissue on the healing colon. During the course of this disease it has been shown by Bargen [2] that pseudoadenomatous polyps may develop in approximately 10 per cent of the cases. Later it was noted by Brust and Bargen [3] and by Hurst [4] that a progression might occur from chronic ulcerative colitis through adenoma to carcinoma. Thus it would seem that here is a disease process in which carcinoma occurs as a complication, and if the progress of those patients with the disease were carefully followed, one might detect the presence of a complicating malignant lesion early and eradicate it by correct measures.

Since our last report in 1944 there have been additional reported instances of carcinoma complicating chronic ulcerative colitis. Sipman [5] reported on a patient who had cecostomy performed after one year of illness with chronic ulcerative colitis. After the operation the colon was quiescent for eighteen years, and then removal of the colon and the rectum was performed for rectal bleeding. Carcinoma was found from the anal canal to the sigmoid and was microscopically proved to be a grade 4 growth. Renshaw and Brownell [6] reported 2 cases of carcinoma encountered in a nine year period in a total of 336 cases of chronic ulcerative colitis. Lynn [7] in 1945 reviewed all the previous literature and collected reports on a total of 98 cases in which carcinoma complicated chronic ulcerative colitis. It was his contention that the evidence submitted in the articles which he reviewed supported the hypothesis that long-continued inflammation causes extensive damage to the bowel wall, which is followed by more or less adequate repair. Where this process is repeated, a tendency to development of malignant change exists.

In 1945 Ricketts, Benditt and Palmer [8] reported 1 case of chronic ulcerative colitis with infantilism and carcinoma of the colon. Carcinoma developed after fifteen and a half years of illness with chronic ulcerative colitis. They stated, "The adenocarcinoma in the descending colon is interpreted as the consequence of the ulcerative colitis." In a more extensive review Ricketts and Palmer [9] reported on complications of chronic nonspecific ulcerative colitis. They found 3 instances in which carcinoma existed as a complication in a group of 206 cases of ulcerative colitis. They also noted a 10 per cent incidence of polyps occurring as a complication in their group. They stated, "Many polyps are merely islets of mucosa more or less actively regenerating, but others exhibit various grades of metaplasia and indeed of neoplasia." In 1947 Cattell and Boehme [10] discussed the importance of malignant degeneration as a complication of chronic ulcerative colitis and reported 10 such cases. In this group 7 of their patients had eight to nineteen years of illness from chronic ulcerative colitis prior to the development of a complicating carcinoma. The average duration of symptoms before cancer occurred was nine years.

Bargen [11] in 1928 reported 17 cases of carcinoma complicating chronic ulcerative colitis, and in 1935 Bargen and Dixon [12] reported an additional 7 cases. In 1944 we [1] reported another 30 instances in which carcinoma complicated chronic ulcerative colitis; this brought the total number of patients with this complication seen at the Mayo Clinic to 54. The present report is concerned with the addition of 41 new cases of this interesting complication encountered in the past five years at the clinic. We shall summarize the significant observations in the 41 cases and report 2 representative cases in detail.

Of the 41 patients presenting a diagnosis of carcinoma complicating chronic ulcerative colitis, the diagnosis was proved in 40 cases by examination of specimens taken at proctoscopic examination, at the time of surgical intervention or at necropsy. The diagnosis in the other case was made by the surgeon performing ileostomy for an obstructing carcinoma of the sigmoid that occurred in 1 of our patients with chronic ulcerative colitis who was operated on elsewhere.

Of the 41 patients, 21 were female and 20 were male. The mean age at onset of the chronic ulcerative colitis was 26.5 years. The mean age at the time diagnosis of the complicating carcinoma was made was 43.3 years. The mean duration of the disease until a complicating carcinoma was diagnosed was 16.8 years. The mean age at onset of colitis, as well as the mean age at onset of carcinoma, was greatly increased by inclusion of a few relatively old patients.

The majority of patients were able to delineate the change in the nature of the symptoms which tended to point to the development of a complicating malignant process. The most prominent symptoms recorded by the patients included: abdominal pain and cramps which were of a different nature from those usually associated with the colitis (18 patients), and a change in bowel habits, in that there was an increase in the number of stools and in the amount of bleeding (15 patients). In 11 patients a mass was palpable at the time of examination. In most of these cases the mass had been palpated by the patient prior to consultation with his doctor.

There was excessive weakness, severe anemia not responding to usual treatment and loss of weight noted

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2. Bargen, J. A.: Ann. Int. Med. **3**: 335-352, 1929.
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4. Hurst, A. F.: Lancet **2**: 1194-1196, 1935.
5. Sipman, H.: Clinics **3**: 1059-1061, 1944.
6. Renshaw, R. J. F., and Brownell, T. S.: Cleveland Clin. Quart. **12**: 123-127, 1945.
7. Lynn, D. H.: Internat. Abstr. Surg. **81**: 269-276, 1945.
8. Ricketts, W. E.; Benditt, E. P., and Palmer, W. L.: Gastroenterology **5**: 272-280, 1945.
9. Ricketts, W. E., and Palmer, W. L., Gastroenterology **7**: 55-66, 1946.
10. Cattell, R. B., and Boehme, E. J.: Gastroenterology **8**: 695-710, 1947.
11. Bargen, J. A.: Chronic Ulcerative Colitis Associated with Malignant Disease, Arch. Surg. **17**: 561-576 (Oct.) 1928.
12. Bargen, J. A., and Dixon, C. F.: Chronic Ulcerative Colitis with Associated Carcinoma, Arch. Surg. **30**: 854-864 (May) 1935.

by one fourth of the group. Five patients presented themselves for examination because of intestinal obstruction. Two patients had had appendectomy done for what was thought to be acute appendicitis occurring during the course of the chronic ulcerative colitis. Three of the 41 patients had had previous surgical removal

Fig. 1 (case 1).—*A*, when the patient was 8 years of age there was evidence of chronic ulcerative colitis with only a little shortening and slight deformity of the right segments of the colon. *B*, at the age of 17 years the patient had changes compatible with severe ulcerative colitis, complicated by a carcinoma at the hepatic flexure and polypoid hyperplasia in the transverse and descending colon.

of carcinoma of the colon but had a new carcinoma at the time of their last examination. In 3 patients there was no change in the symptoms. The last-mentioned 3 patients had been under observation for, or had previously been given the diagnosis of, rectal polyps. Two of the patients had had fulguration of polyps over a period of several years.

An attempt was made to analyze the type of course which the disease tended to follow in this group. Twenty-seven of the patients had chronic active disease with few if any remissions. Three patients had chronic active disease with short remissions lasting a year or less. Ten patients had periodic exacerbations of the disease with periods of relative freedom from symptoms up to as long as eight years at a time. One patient had undergone ileostomy and colectomy twenty-eight years before a grade 4 adenocarcinoma developed in the rectal pouch, which had been permitted to remain.

Multiple carcinomas were present in 12 of these patients. The 41 patients had 58 separate lesions. Of these 58 carcinomas, 23 were graded 1 as to malignancy, 15 were graded 2, 7 were graded 3 and 13 were graded 4. Thus the malignancy of 35 of the 58 lesions was higher than grade 1. Twenty-four (58.5 per cent) of the 41 patients had associated polypoid changes in the mucosa of the colon or rectum.

The distribution of the carcinomas was determined at operation or necropsy; 19 were in the rectum, 5 in the sigmoid, 4 in the descending colon, 6 in the splenic flexure, 6 in the transverse colon, 3 in the hepatic flexure, 4 in the ascending colon and 10 in the cecum. In 1 patient there were areas of adenocarcinoma in the distal part of the ileum.

Of the group of 11 patients with palpable tumors at the time of clinical examination, the growth was located in the sigmoid in 2, in the descending colon in 1, in the splenic flexure in 1 and in the transverse colon in 1. The 6 remaining palpable masses proved to be carcinomas located in the cecum.

REPORT OF CASES

CASE 1.—A girl, 8 years of age, came to the Mayo Clinic in 1938. She gave a history of rectal bleeding beginning at the age of 3 years and continuing over a period of six months. This was associated with pallor and loss of weight.

At the age of 8 years she began to have diarrhea characterized by the occurrence of six to eight bowel movements in twenty-four hours. Within a month after its onset the diarrhea was associated with the passage of blood and was persistent for five months prior to her admission to the clinic. At that time examinations revealed no abnormalities other than symptoms compatible with a diagnosis of chronic ulcerative colitis. Studies included agglutination tests for Shigella organisms, repeated stool examinations for ova and parasites and cultures for pathogenic bacteria. Proctoscopic examination showed the mucous membrane to be diffusely inflamed and edematous, and roentgenologic studies of the colon disclosed the presence of chronic ulcerative colitis with little shortening and only slight deformity of the right segments of the bowel (fig. 1 *A*).

The patient was next seen in August 1941, at which time she was having ten to twelve loose stools every twenty-four hours. Proctoscopic examination disclosed a mucous membrane characteristic of chronic ulcerative colitis which bled readily and was mildly active. Roentgenologic studies disclosed chronic ulcerative colitis involving the entire colon and the terminal part of the ileum.

She was next seen in December 1943. The diarrhea had persisted, but there was not as much bleeding. She had gained 47 pounds (21.3 Kg.) since her first admission. The proctoscopic examination still disclosed a rectal mucosa which was characteristic of chronic ulcerative colitis. However, roentgenologic study of the colon disclosed an increase of shortening and contraction.

The patient returned again in July 1945. She was having eight stools in twenty-four hours with little or no blood and seemed to be progressing fairly well. The proctoscopic report was essentially the same as before.

Her last admission was in December 1947, at the age of 17 years. Since her last visit diarrhea and bleeding had continued. Six months prior to this admission severe anemia and weakness developed, and she was hospitalized elsewhere, where she received treatment consisting of multiple blood transfusions, the use of vitamins and emetine hydrochloride and dietary measures. This treatment effected some improvement. In the fall before her return to the clinic, the diarrhea and bleeding became worse, and because of a temperature of 101 F. she was

Fig. 2 (case 1).—*A*, the surgical specimen illustrates the complicating multicentric, diffuse, mixed grade 2 and grade 4 adenocarcinoma involving the cecum, the ascending colon and the transverse colon to the line of resection. *B*, the necropsy specimen shows the changes of advanced chronic ulcerative colitis with polypoid hyperplasia of the remaining part of the colon.

again hospitalized elsewhere. She received 3,000 cc. of blood by transfusion and both parenterally and orally administered chemotherapeutic and antibiotic agents. Sharp, generalized abdominal cramps developed, and she vomited two to three hours after meals. Associated with this there was pronounced loss of weight and weakness.

At the time of our examination in December 1947 she weighed 88 pounds (39.9 Kg.), as contrasted with her weight of 111 pounds (50.3 Kg.) two and one-half years previously.

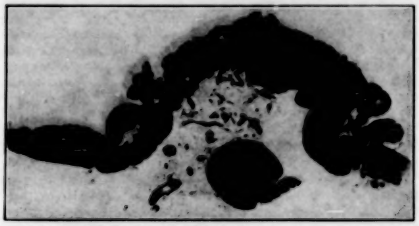


Fig. 3 (case 1).—An area of grade 4 adenocarcinoma with involvement of a lymph node by metastasis.

There was diffuse abdominal tenderness. A polypoid mass could be felt by digital rectal examination. The proctoscopic examination disclosed active ulcerative colitis with moderate contraction of the rectum. Several polyps were noted. Scout (preliminary survey) roentgenograms of the abdomen showed isolated segments of the jejunum and ileum distended with gas. After medical treatment the distention soon subsided, and in January 1948 a roentgenogram of the colon revealed severe chronic ulcerative colitis with extensive polypoid hyperplasia, the deformity characteristic of a carcinoma of the hepatic flexure and large polyps in the transverse and descending colon (fig. 1 *B*). After appropriate preoperative preparation, consisting of blood transfusions, parenteral feedings, oral use of phthalylsulfathiazole (sulfathalidine®) and parenteral use of penicillin, a single-barrel ileostomy and a right hemicolectomy were performed by Dr. J. M. Waugh.

In the part of the colon removed at operation the pathologist noted the presence of chronic ulcerative colitis complicated by multicentric, diffuse, mixed grade 2 and grade 4 adenocarcinoma involving the cecum, the ascending colon and the transverse colon to the line of resection. In the ascending colon the lesion was annular, ulcerative and scirrhous and caused obstruction to the lumen along a tubular segment 8 cm. in length. The remaining nodules of carcinomatous tissue were for the most part polypoid, measuring 20 to 5 mm. in diameter. The peritoneum and regional nodes were involved by grade 4 adenocarcinoma. The part of the ileum removed in the course of operation was the site of subacute ileitis, the inflammatory process being confined to the mucosa, in which there were shallow ulcers ranging from 10 to 3 mm. in diameter. These ulcers decreased in size and number proximally. Fixed sections of the more distally located ulcers and the surrounding ileum showed beginning grade 2 adenocarcinoma in situ located in islands of regenerative repair (*fig. 2 A*).

On the third postoperative day circulatory collapse developed and the patient died in spite of supportive measures (figs. *2 B* and 3).

Case 2.—A white man, 22 years of age, came to the clinic in October 1943. He gave a history of profuse diarrhea beginning at the age of 10 years. An appendectomy had been performed elsewhere without relief. The diarrhea had persisted and the stools had been bloody since 1935. A diagnosis of amebic dysentery had been made by his local physician and antiamebic therapy instituted in 1938. There was temporary amelioration of his symptoms, but soon bloody diarrhea recurred, with ten to fifteen bloody rectal discharges several days of each month. On his "good" days he averaged five liquid stools in twenty-four hours.

He was 65¼ inches (165.7 cm.) tall and weighed 104½ pounds (47.4 Kg.). The temperature, pulse rate and blood pressure were normal. He was thin and appeared chronically ill. There was an apical systolic murmur of moderate intensity, which was not transmitted. There was tenderness in the region of an old appendectomy scar and in the left lower abdominal quadrant. The anal sphincter muscle was tense and the mucosa felt granular.

The urine was normal. The hemoglobin measured 7 Gm. per hundred cubic centimeters. The erythrocytes numbered 3,540,000 and the leukocytes 8,100 per cubic millimeter. A flocculation test for syphilis elicited a negative reaction. The sedimentation rate was 70 mm. in one hour (Westergren method). Several stools were negative for ova and parasites, and cultures yielded no enteric pathogens. A roentgenogram of the thorax did not reveal any abnormality. Proctoscopic examination disclosed the characteristic changes of ulcerative colitis. At 18 cm. the lumen was contracted to a diameter of 2 cm. Roentgenograms of the colon disclosed chronic ulcerative colitis involving the entire colon (fig. 4).

The patient was treated by rest; a diet high in calories, proteins and vitamins and low in residue; repeated blood transfusions, and the administration of neoprontosil® (disodium 4-sulfamido-phenyl-2-azo-7-acetylamino-1-hydroxy-naphthylene, 3,6-disulfonate), vitamin supplements and small amounts of a mild sedative and antispasmodic drug. With such a program the number of stools per day decreased to four, and the weight rose to 111 pounds (50.3 Kg.) over a ten day period. On this program he did fairly well for the ensuing four and one-half years, averaging three to five stools with occasional blood in twenty-four hours. He worked regularly and finally married.

Fig. 4 (case 2).—When the patient was 22 years old chronic ulcerative colitis involved the entire colon.

In February 1948 he experienced rather rapid onset of intestinal obstruction characterized by severe abdominal cramping, vomiting and obstipation. Cecostomy performed elsewhere was followed in five days by resection of an obstructing tumor of the ascending colon reported to be the size of a fist. His weight dropped from his usual 123 pounds (55.8 Kg.) to 90 pounds (40.8 Kg.) postoperatively. After cecostomy exteriorization of the growth was performed. The growth was later removed and an anastomosis made and closed. The cecal stoma was also closed, but postoperatively it reopened and

several attempts were made at closure. A mass appeared at the stoma and persisted until his present admission to the clinic (fig. 5). The mass had been excised twice and burned off once. After these operations his weight increased to 118 pounds (53.5 Kg.).

The patient returned to the clinic on Jan. 19, 1949, at the age of 27 years. He weighed 117 pounds (53.1 Kg.) and was 65 inches (165.1 cm.) tall. The blood pressure, pulse rate and temperature were normal. In the right lower abdominal

Fig. 5 (case 2).—Adenocarcinoma, grade 3, surrounding the abdominal stoma.

quadrant was a friable mass approximately 8 cm. in diameter surrounding an abdominal stoma (fig. 5). The liver was not palpably enlarged. Rectal examination disclosed a tight anal sphincter muscle and canal. The erythrocytes numbered 4,570,000 and the leukocytes 8,400. The hemoglobin measured 10.9 Gm. The sedimentation rate was 31 mm. in one hour (Westergren). The urine was normal. The blood urea measured 24 mg. per hundred cubic centimeters. Roentgenologic study of the thorax revealed no metastasis. Biopsy of the mass surrounding the stoma disclosed adenocarcinoma, grade 3. Palliative roentgen therapy was administered, and the patient was dismissed to his home.

Because the mass had regressed to a level with the surrounding skin a month after dismissal and then had become exuberant again, the patient returned for further treatment the latter part of March 1949. Again there was a short course of palliative roentgen therapy. When last heard from, on April 21, he was seriously ill with recurrent intestinal obstruction.

SUMMARY AND CONCLUSIONS

1. Carcinoma occurs as a complication of chronic ulcerative colitis. Forty-one such cases are reported in summary form, bringing the total number encountered at the Mayo Clinic to 95 cases.

2. The complication occurs among both male and female subjects, with no particular affinity for either sex.

3. Chronic ulcerative colitis had been present 16.8 years (mean) before complicating carcinoma occurred in this group of patients.

4. A change in the nature of symptoms presented by the patient, or the presence of palpable abdominal or rectal mass, arouses suspicion that a complicating neoplasm is present.

5. The malignancy of the complicating carcinoma tends to be of a degree greater than grade 1 by Broders' method of classification. The occurrence of multiple carcinomas is not unusual.

6. Polypoid change in the mucous membrane of the colon or rectum was observed in 58.5 per cent of the 41 cases in which chronic ulcerative colitis was complicated by carcinoma.

7. Patients with long-standing chronic ulcerative colitis, with or without ileostomy, should be periodically checked by the maintenance of a complete history and by physical examination, appropriate laboratory tests, proctoscopic examination and roentgenologic inspection of the colon to detect as early as possible the development of malignant neoplasia as a complication.

ABSTRACT OF DISCUSSION

DR. FRANK H. LAHEY, Boston: We have had 17 patients with carcinoma arising in ulcerative colitis in over 600 patients treated for this disease. Of these 17 patients only 2 are alive today, the longest interval since operation being four years. The malignant condition was not diagnosed in the 2 patients who are alive but was discovered incidentally after the colon had been removed. One misfortune in this disease and its relation to malignancy is the difficulty in diagnosing it in time so there will be a reasonable five year nonrecurrence rate. If there has been a period of remission followed by obstructive symptoms, and if, after this period of remission, bright blood is passed or a mass can be palpated this should make any physician seriously consider the possibility that a carcinoma has arisen. The type of malignancy which occurs in ulcerative colitis is unfavorable because it occurs in the presence of an inflammatory process. This raises the question as to the incidence of malignancy in ulcerative colitis after an interval of years in patients who have had this disease and have not had a colectomy. Our figures and those of others indicate there will be an increase in the incidence of malignant degeneration—roughly, up to 30 per cent—among patients who have ulcerative colitis for ten years or over and who have not had colectomy. I do not believe that should mean that every patient with ulcerative colitis should have a colectomy; but one must consider that today a patient with a total colectomy, including removal of the rectum, can be rehabilitated almost completely. Ileostomies can now be performed and managed with the various tight-fitting bags that seal off the ileostomy, so that physicians should not hesitate to advise total colectomy on the basis of unfortunate experiences with ileostomies some years ago. From our experience we can say that the discharge from ileostomies will become more solid as soon as total colectomy is done; that patients will be able to manage the ileostomies better after the colectomies are done; that if total colectomies are done relatively early in the disease there is no possibility of malignancy as a complication, and that it is possible for women who have had ileostomies to marry and, in many cases, to have children. The mortality rate from ileostomy today is not influenced by surgeons but by the gastroenterologists, because, if the patients undergo operation early enough, the mortality rate almost certainly can be kept at 4 per cent or under. Physicians today have this advantage also. If there is doubt, ileostomy can be done and given a period of trial. If the colon at rest will regain its haustrations, regain normal rectal mucosa on proctoscopic examination and show complete relief of symptoms, then gastrointestinal continuity can be restored. However, this must never be done without warning the patient that no matter how well these requirements are fulfilled, his disease may recur.

DR. ANTHONY BASSLER, New York: In New York City, Dr. Cave and other surgeons with whom I have worked are agreeing more and more with the point of view expressed by Dr. Lahey. We have come to the conclusion now, since carcinomas have developed in so many of our patients, that patients with chronic ulcerative colitis must be kept under

observation for a number of years. Sometimes carcinoma does not develop for fifteen or more years, during which time the patient will certainly have improved enough to be able to get about and work. We now believe that, in about one third of all instances of ulcerative colitis which come to operation and in which ileostomy is done, after six months or a year or so there should be insistence on the removal of the colon, no matter how much improvement the patient has made or how much he may feel opposed to the procedure. Since an ileostomy has already been performed, the removal of the colon and perhaps even the rectum will not alter the condition of the patient. In these cases there are not more than 3 or 4 per cent in which an internal connection is possible, and in these there is always a normal-appearing rectum. Such cases may be temporized with as far as the removal of the rectum is concerned. In ulcerative colitis, at least a third of the patients recover. There is another group, more than a third, who improve to such an extent that they lead normal lives for years. Perhaps about 10 per cent are difficult cases, in which surgical intervention is to be considered. If, after having been well for a considerable time, a patient begins to bleed or becomes worse again, malignant disease should be suspected unless proved otherwise. Increasing incidence makes one feel that malignant disease would have been obviated if colectomy had been done. I feel that the physician has a responsibility after the ileostomy, whatever the situation may be, of not depending entirely on improvements. He should insist in the vast majority of cases that a colectomy be performed.

DR. J. ARNOLD BARGEN, Rochester, Minn.: We have discussed here one of the most serious problems in medical therapy. The complication of carcinoma in cases of ulcerative colitis is most distressing. Fortunately, this combination of lesions is relatively rare. I have heard it said that the incidence of carcinoma in patients with ulcerative colitis is no higher than is that observed in the population as a whole. I cannot agree with this statement. Furthermore, it is particularly impressive that in so many of these cases the carcinoma occurs in persons before the age at which cancer usually develops. Anyone who has seen a dozen young persons between the ages of 15 and 30 die of generalized wildfire carcinomatosis must be impressed by the seriousness of this lesion, and by the fact that it occurs more frequently in patients with ulcerative colitis than in the population as a whole. In one year the vital statistics of this country indicate an incidence of 0.088 per cent carcinoma of the intestine in the population as a whole. This incidence depends on the nature of the group of patients observed and the size of the series studied, but all agree that it is much higher than in the population as a whole. The occurrence of multiple carcinomas in young persons who have had colitis for some time is an extraordinary manifestation of disease. The decision about when to operate on the patient with ulcerative colitis is often difficult to make. Many of these patients become asymptomatic and are in good health for years. I have records of patients who have been well at least fifteen or twenty years. There is some factor in the patient with ulcerative colitis which predisposes him to this infection. I am not sure that the statement by a discusser of a previous paper "that there is not something lacking in the colons of these cases which predisposes to the organism's invasion," is entirely correct. In general, it is well to limit surgical intervention to those cases in which complications of ulcerative colitis, i. e., carcinoma, occur. When the decision to operate on a patient with ulcerative colitis has been made, ileostomy and subsequent colectomy are usually indicated. The skin-grafted ileostomy of Dragstedt and Black represents one of the great advances in intestinal surgery, of the last quarter of a century. May this presentation not point the way to the cause and inception of carcinoma in the large intestine and perhaps in the body generally? I hope there is some scientific person in the audience who will take up this challenge.

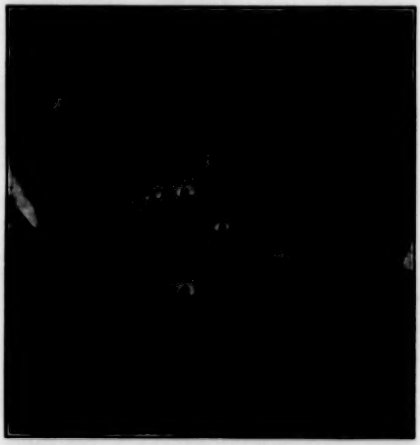
Clinical Notes, Suggestions and New Instruments

FECAL FISTULA DUE TO METALLIC MERCURY FROM A MILLER-ABBOTT TUBE

Report of a Case

W. W. LINDENMUTH, M.D.
Philadelphia

The case herein reported presents a complication following escape of metallic mercury from a Miller-Abbott tube into the intestinal tract. On many occasions the mercury has escaped into the intestinal tract without harm. When Harris,[1] in 1944, presented the idea of using metallic mercury as an aid in passing a tube through the pylorus, he stated that he knew of no harmful effect. Later [2] he reported cases in which the mercury had escaped, causing no ill effect. In this instance, however, a fecal fistula failed to heal because of the presence of mercury in the tissue surrounding the fistula.



Mercury droplets on the cut surface of a granulomatous nodule adjacent to the fistula (× 10).

REPORT OF A CASE

History and Clinical Course.—J. W., a 29 year old white man, was first seen on Feb. 12, 1948. He was referred for treatment of a persistent fecal fistula in the right lower quadrant of the abdomen, of four and one-half months' duration. In October 1947 he had been operated on elsewhere for acute appendicitis with perforation and peritonitis. The appendix was removed and the peritoneal cavity drained through a McBurney incision. The patient's convalescence was stormy, and, because of ileus, intestinal decompression was necessary. A Miller-Abbott tube with mercury in the bag was used for this purpose. During convalescence the mercury escaped from the bag. A fecal fistula developed through the McBurney incision. After several weeks the patient was well except for continued drainage from the fecal fistula. On several occasions the fecal drainage ceased, only to commence again after several days.

From the Division of Surgery, Pennsylvania Hospital.

Read before the Philadelphia Academy of Surgery, May 2, 1949.

1. Harris, F. I.: A New Rapid Method of Intubation with Miller-Abbott Tube, J. A. M. A. **125**:784-785 (July 15) 1944.

2. Harris, F. I.: Intestinal Intubation in Bowel Obstruction: Technique with New Single Lumen Mercury Weighted Tube, Surg., Gynec. & Obst. **81**:671-678 (Dec.) 1945.

Treatment.—The patient was well nourished and did not appear ill. His only complaint concerned the fecal drainage and intermittent abscesses in the abdominal wall about the fistulous tract. The physical findings were normal except for the draining fistula in the midportion of the McBurney incision. Pressure over the lower portion of the wound caused pain and drainage of purulent material through the fistulous opening. At the time of admission to the hospital, Feb. 17, 1948, there was an abscess underneath the lower portion of the scar. This was incised. The abscess was superficial to the external oblique fascia. The incision was extended to include the fistulous tract, which passed through the abdominal wall directly into the cecum, with the side extension into the subcutaneous abscess. At the most dependent portion of the subcutaneous abscess, small droplets of mercury were discovered. An attempt was made to remove the tissue containing the mercury, and the wound was packed. The patient was given phthalysulfathiazole (sulfathalidine®), 5 Gm. daily. This was continued for three weeks.

Subsequently, a roentgenogram of the abdomen showed the presence of foreign bodies, presumably mercury droplets, in the right lower quadrant. The wound appeared to granulate satisfactorily and was allowed to close, but within one month there was again evidence of inflammation and a recurrence of the fistula. On March 19 the abdominal wall was again explored. An extension of the abscess was noted in the upper portion of the wound. This was opened, and an attempt was made to close the fistula in the cecum. The cecal edge was turned in with a purse string suture and the peritoneum and transversalis fascia approximated over the cecum. The remainder of the wound was left open. Again the fistula reopened.

A barium sulfate enema failed to demonstrate any intrinsic lesion of the cecum. It was felt that the mercury was the cause of the persistence of the fistula. A third operation was performed on May 19 excising the fistula and the mercury-bearing tissue. A section of the abdominal wall with the fistula and the adherent portion of the cecum were excised. The cecum was closed and the abdominal wall repaired in anatomic planes. Convalescence was uneventful. Fifteen months later the patient was well, the wound was healed and the fistula had not recurred.

Pathologic Observations.—The fistulous tract extended from the skin directly into the cecum. At one edge of the mucosa surrounding the fistulous opening there were five elevated, firm, dark red nodules, averaging 4 mm. in diameter. Similar nodules were noted on the serosal surface. The nodules showed slight resistance to cutting. The cut surface was yellow-brown, and mercury droplets were scattered over the surface. Microscopically, the wall of the sinus tract was composed of relatively cellular, fibrous connective tissue, infiltrated by lymphocytes, monocytes and occasional neutrocytes. Most of the cecal wall appeared normal. In several areas, however, the submucosa was infiltrated with foci of lymphocytes and large mononuclear leukocytes. In other areas there was definite neutrocytic infiltration. There was a moderate degree of fibrous tissue proliferation in these zones of cellulitis. These areas surrounded opaque globular masses of mercury and oval or circular defects. The observations indicated chronic cellulitis with scattered foci of acute cellulitis superimposed. The accompanying photograph shows a granulomatous nodule in the cecum after section.

Discussion.—It is probable that the fecal fistula developed secondary to the appendicitis. The fistula failed to heal because of the presence of the metallic mercury. No other cause for persistence of the fistula was found. The mercury, as a foreign body, caused granulomatosis and prevented eradication of the infection and closure of the fistula. This case suggests that difficulties may arise if mercury is free in the gastrointestinal tract and there is a break in the mucosa. Chodoff [3] presented a case in which metallic mercury escaped into the intestinal tract after right colectomy and ileocolostomy. Three intestinal fistulas developed proximal to the anastomosis. At autopsy the fistulas had adjacent abscesses, each containing metallic mercury. In patients undergoing intestinal operation, metallic mercury free in the intestinal tract may interfere with healing. Excision of the mercury-bearing tissue seems necessary if fistulas or abscesses develop because of the presence of metallic mercury.

3. Chodoff, R. J.: Discussion of Case, Philadelphia Academy of Surgery, May 2, 1949.

SUMMARY

A case is presented in which metallic mercury escapsed the intestinal tract through a fistula and remained in the tissues. The mercury caused a granulomatous reaction which interfered with normal closure of the fistula. Excision of the fistula and mercury-bearing tissue resulted in prompt cure.

METHOD FOR MIXING INSULINS

HASCALL H. MUNTZ, M.D.
Indianapolis

The addition of mixed insulins to the armamentarium of the physician who treats diabetes mellitus precipitated a new problem, the need for a satisfactory method for mixing insulins.

It is the continuous hope of clinical investigators to erase the technical errors of administration of insulin from the list of variables in the treatment of diabetes mellitus. I have been striving toward such an end and propose to present an aid in the management of the diabetic patient.

Dr. Franklin B. Peck of the Indianapolis General Hospital published reports on a unique method for mixing insulins in 1943 [1] and 1944.[2] Clinical trial of this method at the Indiana University Medical Center at Indianapolis has proved satisfactory in the majority of patients who were treated in the University Hospitals and Outpatient Department. There was, however, a definite handicap in treating the aged and mentally slow patients to handle the syringes and use the technic properly. Failure occurred consistently, in spite of numerous attempts to impress patients with the importance of following the technic closely. Teaching each patient was a time-consuming factor which delayed management of large outpatient clinics.

NEW TECHNIC

I have instructed patients in a new technic of mixing insulins for approximately two years. In addition, each patient was given a copy of the accompanying illustration with the prescribed doses of insulin written in the margin next to the respective bottles. This eliminated the writing of detailed and often misinterpreted instructions.

The illustrated method has been discussed with Dr. Peck, who pointed out that an extremely minute air bubble will be present in the syringe after withdrawal of the protamine zinc insulin. This bubble has the volume of the barrel of a 27 or 25 gage needle. Dr. Peck considers this insignificant, because it is a constant and because the total dosage must be established individually for each patient on the basis of clinical and laboratory data for that patient.

The air bubble may be eliminated by a slight modification in technic. After procedure 1, remove airway in *P* bottle (the needle having served its purpose, since positive or negative pressures have been equalized with outside air pressure). Next withdraw the dose of regular insulin and withdraw the needle with the syringe attached, thus keeping the needle barrel full. This procedure will eliminate the air bubble. Then insert the needle with syringe attached into the bottle containing protamine zinc and complete procedures 5 and 6.

The technic may be summarized by saying that the pressure in the bottles is equalized by inserting a needle into each at the beginning of the procedure. The regular insulin is withdrawn from an inverted bottle. Following this, the specified amount of protamine zinc insulin is withdrawn in a similar manner.

From the Department of Internal Medicine, Indiana University Medical Center.

1. Peck, F. B.: Treatment of Uncomplicated Diabetes with Mixtures of Insulin and Protamine Zinc Insulin, Indiana State M. J. **36**: 340, 1943.
2. Peck, F. B.: Treatment of Diabetes Mellitus by "Single Injection" Method, West Virginia M. J. **40**: 341, 1944. Peck, F. B., and Schechter, J. S.: Newer Insulin Mixtures, Follow-Up Study, Proc. Am. Diabetes A. (1944) **4**: 57, 1945.

This eliminates the chance negative or positive pressures within the insulin bottles.

Actually the procedure is so simple that it can be demonstrated to the patient in less than two minutes, from beginning to end.

The principle of Peck's method concerns the insurance of a neutral pressure within the bottles before and after insulin withdrawal. This is highly desirable to prevent chance contamination of the regular insulin with the protamine-containing insulin. However, one does not always accomplish this by the injection of air into the bottle because changes in temperature play a part in this procedure. In addition, the technic prevents sucking of air bubbles into the syringe between the barrel and the plunger by a relative negative pressure. This is a fairly common complaint of patients using any type of insulin. It is especially true with syringes which have been used over long periods of time and have been boiled many times.

Diabetic patients often find it necessary to carry insulin on trips or vacations where temperature is constantly changing. Temperature changes also occur on hospital wards where insulin is mixed for several patients in one morning and the bottle is allowed to stand at room temperature after having been stored in an ice box.

With this modified method, temperature changes play no part, because the insertion of the needle equalizes pressures within and outside the bottle immediately. The pressure remains so equalized as long as the needle is in place.

Special modifications of protamine insulin which simulate the action of mixed insulins are being prepared for clinical trial in stable form. These preparations of insulin will not have the flexibility which the self-mixed insulins have. The latter can be tailored to fit the individual requirements of the diabetic patient. Therefore, standardization of a simple, accurate technic is desirable. The simplicity of this technic and a two year trial of it have proved that it is satisfactory.

This illustration is a reduction of a mechanically reproduced 8½ by 11 inch (21.6 by 27.9 cm.) copy of instructions given to all patients taking mixed insulins at the Indiana University Medical Center. Each copy costs a fraction of a cent and clearly demonstrates the exact procedure to all patients, including illiterate persons. Clinical trial of this procedure for two years has proved it to be highly satisfactory.

HEMORRHAGE FROM RUPTURE OF A GRANULOSA CELL TUMOR OF THE OVARY

JOHN H. BOGLE, M.D.
Brooklyn

Although granulosa cell tumors of the ovary are not rare, only a few reports of severe intraperitoneal bleeding from them have appeared in the literature.[1] Such a case is here reported, with bleeding severe enough to cause an acute surgical emergency in which the diagnosis was obscure before operation.

Fig. 1.—In the more compact portions of the tumor, bands of tumor cells are more or less confluent. A perithelial mantling of a small blood vessel is seen in the left central part of the field.

REPORT OF CASE

History.—T. J., a white housewife aged 55, was admitted to the Brooklyn Hospital Oct. 25, 1948 complaining of severe abdominal pain. For a month previously she had suffered from vague, mild, generalized abdominal pain. Three days before admission, the patient experienced a sudden sharp pain in the right upper portion of the abdomen from right to left. The pain then abated considerably but continued to bother her until the day of admission. On that day it became exceedingly severe. It was cramplike, across the upper part of the abdomen, and spread toward the pubis. It did not radiate to the back or shoulders. There had been no nausea, vomiting, diarrhea or constipation. The bowels had moved normally on the day of admission.

Past History.—In the past the patient's general health had been good except for high blood pressure, which had been "over 200" a year and a half previously. She had borne two children, who were living and well. The menopause had occurred five years previously. Several months before admission the patient had had some vaginal spotting of blood. As

From the department of surgery of the Brooklyn Hospital.

1. Brewer, A. C.: Granulosa Cell Tumor of Ovary As Acute Abdominal Emergency, Brit. M. J. 1:49 (Jan. 10) 1948. Von Friesen, B.: Spontaneous Rupture, Especially of Granulosa Cell Tumors, with Severe Hemorrhage into Free Abdominal Cavity, Acta obst. et gynec. Scandinav. 24:8, 1943. Bach, A. C., and Montgomery, A. M.: Rupture of Infarcted Granulosa Cell Tumor with Massive Hemorrhage, J. Indiana M. A. 34: 421 (Aug.) 1941. French, W. G.: Rupture of Granulosa Cell Tumors of the Ovary with Intra-Abdominal Hemorrhage: Report of Two Cases, read at meeting of the Medical Society of the State of New York, Buffalo, May 4, 1949, to be published.

far as could be ascertained, it had occurred over a period of a month or more intermittently, without pain, and had ceased at least a month before admission. Vaginal bleeding did not accompany her present symptoms and was not present on her admission to the hospital.

Physical Examination.—Examination revealed a pale, obese woman, lying in bed and complaining of severe pain in the right upper portion of the abdomen. The blood pressure was 130 systolic and 90 diastolic. The abdomen was huge, with a very thick panniculus hanging over the sides and below like an apron. Generalized abdominal tenderness was present, most severe in the right upper quadrant, with involuntary muscle spasm and rebound tenderness. No masses could be felt. Intestinal sounds could be heard all over the abdomen. Vaginal and rectal examinations revealed no tenderness. Some bulging of the anterior vaginal wall was present. Bimanual vaginal examination was unsatisfactory because of the extreme obesity and abdominal tenderness. Urinalysis was essentially normal. Examination of the blood disclosed that the hemoglobin level was 92 per cent and the white blood cell count 17,100, with 86 per cent polymorphonuclear netrophils.

It was considered that the patient had an acute abdominal condition which required surgical intervention. Because the symptoms and signs were predominantly in the right upper quadrant, a tentative preoperative diagnosis was acute cholecystitis with probable rupture.

Surgical Data.—The patient was operated on under intratracheal cyclopropane anesthesia with curare. A right rectus incision was made, and on opening the peritoneum a large amount of bloody fluid, estimated to be about 1,000 cc., was encountered. The fluid was aspirated; the gallbladder was palpated and found to be normal. The exploring hand was then passed downward, and a large tumor was discovered rising out of the pelvis. The incision was extended caudad, and the tumor was revealed to be a large cystic mass involving the right ovary, about 20 cm. in diameter. In the anterior wall of the mass there was a rent 2.5 cm. in length, from which blood was steadily escaping. The tumor was of a semicystic, spongy consistency. It had a broad base and extended deep into the pelvis. The peritoneum lateral to the tumor was incised, and by blunt finger dissection a plane of cleavage was found and the mass mobilized out of the pelvis.

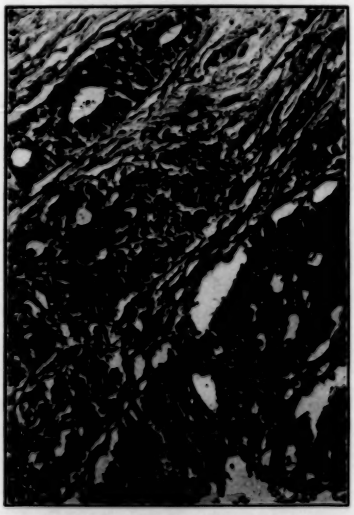


Fig. 2.—Anaplasia is fairly well defined in this field. Toward the left are several small glandlike clusters of cells. These were interpreted as Call-Exner bodies.

The mass, consisting of the right ovary and fallopian tube, was excised in toto, without breaking into it. During the procedure there was constant hemorrhage through the rent in the tumor and from the bed of the mass as it was mobilized, and a large amount of blood was lost. Soft tumor tissue, necrotic in appearance, also escaped through the rent in the mass during its removal. After the tumor was removed, all bleeding points were controlled and the field was made dry.

Fig. 3.—The blood vessel toward the top has an encircling band of tumor; the more peripheral tumor tissue has been destroyed by necrosis. The entire lower half of the field is infarcted, the necrosis involving both the epithelium and the stromal vascular septums.

The left ovary was small and atrophic. The uterus was normal in size, but what appeared to be a tumor implant 1 cm. in diameter was present on its anterior wall. There was one other implant 3 cm. in diameter beneath the peritoneum, just distal to the caput cecum. Both were yellowish white.

The patient went into shock during the operation, and the systolic blood pressure dropped to 60 despite rapid transfusion of blood into two veins and use of the Trendelenburg position. At the end of the surgical procedure the patient was in a precarious condition, and it was believed that the operation should be completed as quickly as possible. Accordingly, the peritoneal cavity was flushed out with warm saline solution and the abdomen closed in layers without drainage, after 100,000 units of penicillin was instilled in the pelvis. The patient was placed in an oxygen tent postoperatively, and her condition improved rapidly. She was up and walking about on the second postoperative day. She left the hospital on the fourteenth day in good condition, with the wound healed. At the time of writing, seven months after the operation, she is well.

PATHOLOGIC OBSERVATIONS

The surgical specimen was an encapsulated cystic mass with an average diameter of 12 cm. The capsule was tough and fibrous with a smooth outer surface. It was torn at two points, the larger defect being a rent 7 cm. long. Soft, seminecrotic hemorrhagic tissue protruded through the tears. Sectioning revealed that the entire mass was made up of soft, mottled.

friable tissue enclosing scattered small cystic spaces. Attached to the main mass was a structure containing an oviduct and some blood vessels.

Microscopic examination of sections showed a partially necrotic tumor, the live portions of which consisted of bands of epithelial tissue resembling the granulosa layer of atretic ovarian follicles. The cells composing these layers were moderately anaplastic and formed occasional rosette-like clusterings and tiny glands, or Call-Exner bodies. Mitotic figures were numerous. Necrosis was not confined to the epithelial structures but frequently involved the stroma as well. The tumor was diagnosed as a granulosa cell carcinoma of the ovary.

COMMENT

There appears to be agreement in general among gynecologists that granulosa cell tumors that are well encapsulated in young women should be treated by conservative surgical measures, while radical procedures should be used in the older age group. It has come to be recognized that these tumors are frequently malignant and will metastasize and recur, which was formerly considered rare. The recurrence rate has been reported to vary from 4.5 to 28 per cent.[2]

A total hysterectomy with bilateral salpingo-oophorectomy and excision of the visible metastases would have been the procedure of choice in the case reported. However, the grave condition of the patient during the operation entirely precluded this. Reoperation was advised but was refused by the patient. Shortly after discharge from the hospital she underwent a full course of roentgen therapy. The prognosis for complete eradication of the tumor by this means is probably poor.

The cause of the bleeding in this tumor is not apparent. There was no torsion. The large amount of necrosis which was present suggests the possibility that hemorrhage could have occurred from necrotic blood vessels.

142 Joralemon Street (2).

SIMPLE LYMPHOMA OF THE SPHINCTERIC RECTUM IN IDENTICAL TWINS

EMIL GRANET, M.D.
New York

The term lymphoma, according to W. C. McCarthy of the Mayo Clinic, should be reserved for all visible and palpable enlargements of lymph nodes or follicles. These tumors may be inflammatory or neoplastic. Ewing defined simple lymphoma as local or regional, circumscribed, chronic enlargement of lymph nodes which are self limiting and do not lead to systemic invasion.

Lymphomas are rather common pathologic growths and are widely distributed throughout the gastrointestinal tract. They occur infrequently in the sphincteric rectum and anus. A careful search of the literature for the past two decades plus cases personally observed revealed only 54 cases of simple or malignant lymphoma occurring in the sphincteric rectum or anus. In this region these tumors can resemble or occur as part of polyps, hypertrophied papillae or thrombosed hemorrhoids. These tumors vary widely in gross structure and appearance. In the reported cases the correct diagnosis of lymphoma was established only after excision of the lesion and examination of the tissue by the pathologist.

REPORT OF CASES

Case 1.—F. C., a man aged 31, for about one year complained of increasing constipation, soreness in the anus and protrusion of a mass during defecation. Digital and anoscopic examination revealed a smooth, salmon-colored polyp, 1 by 1 by 1 cm. in size, on a short pedicle, situated 3 cm. from the anorectal junction on the anterior wall of the rectum. Sigmoidoscopy, barium enema and blood studies revealed essentially normal conditions.

The polyp, the pedicle and a cuff of surrounding mucosa were excised on Nov. 9, 1940 with the patient under caudal anesthesia. Histologic sections showed slightly flattened anoderm and rectal mucosa, beneath which was an enormous deposit of hyperplastic lymphoid tissue with large, pale, germinal follicles. The diagnosis was simple lymphoma of the rectum (figs. 1 and 2). The patient has remained well to date.

Fig. 1 (case 1).—Low power photomicrograph showing flattened anoderm and rectal mucosa; lymphoma has germinal follicles in the submucosa.

Case 2.—W. C., a man aged 38, twin brother of F. C., reported for examination with a history of a sense of discomfort in the anus associated with protrusion during defecation of a mass of tissue which required manual replacement. Symptoms had increased in severity over a two year period. The patient stated that his rectal difficulty was similar to that

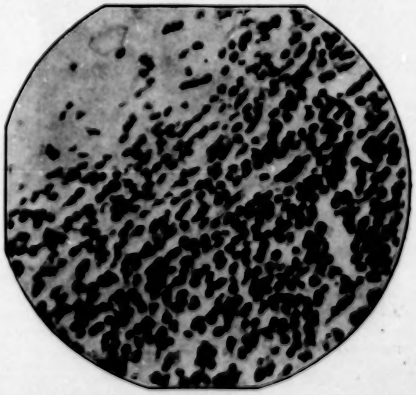


Fig. 2 (case 1).—High power magnification of tissue from the edge of the lymphoid tumor.

experienced by his twin brother seven years before and that it was caused by a similar tumor. On digital examination three small, discrete submucous infiltrations were found in the left anterior segment of the rectum 2 cm. above the anorectal margin. Anoscopic examination disclosed that they were small sessile polyps, salmon in color, each less than 1 cm. in its

2. Hodgson, J. E.; Dockerty, M. B., and Mussey, R. D.: Granulosa Cell Tumor of the Ovary: A Clinical and Pathologic Review of Sixty-Two Cases, Surg., Gynec. & Obst. 81:631 (Dec.) 1945.

From the Department of Surgery, French Hospital.

largest dimension. All other examinations revealed essentially normal conditions.

On Sept. 25, 1947 these tumors and a wide cuff of adjacent mucosa were excised with the patient under caudal anesthesia. Histologic examination showed that these lesions were identical in structure with the simple lymphoma removed from the twin brother of the patient (figs. 3 and 4).

Fig. 3 (case 2).—Low power photomicrograph showing two simple lymphomas in the submucosa of the anorectum.

COMMENT

Two cases of simple lymphoma of the sphincteric rectum occurring in identical twins are recorded. It is probable that lymphomas of the anorectum occur more commonly than is evident from cases reported in the literature. It must be again

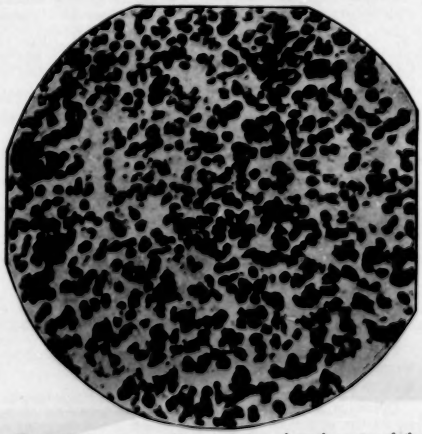


Fig. 4.—High power magnification of tissue from the center of the germinal follicle.

emphasized (as has been repeatedly pointed out by Hellwig, Rosser, Tom Smith, Buie and others) that purportedly benign lesions of the anorectoum may be potentially or actually cancerous.

Of 54 cases of lymphomas of the sphincteric rectum and anus reported in the last two decades, 26 were malignant lymphomas or lymphosarcomas. Clinically the correct diagnosis of these lesions is impossible, as they too often resemble one of the numerous types of benign lesions so commonly found at this site. It becomes mandatory, therefore, that surgeons submit tissue from all lesions excised from the anorectum for careful microscopic examination by competent pathologists.

250 West Fifty-Seventh Street (19).

CANINE GENITAL MONILIASIS AS A SOURCE OF REINFECTION IN THE HUMAN FEMALE

WALTER J. REICH, M.D.
and
MITCHELL J. NECHTOW, M.D.
Chicago

Monilia infestation of the human vagina is a common gynecologic problem. It is well established that the causative fungus of mycotic vaginitis is the "thrush fungus," or Candida albicans. This fungus grows well in the glycogen medium of the vagina,

Fig. 1.—Culture of canine genital material.

especially during pregnancy and in diabetes mellitus, when the glycogen content is decidedly increased. The symptoms of itching, burning, soreness, leukorrhea and not infrequently acquired dyspareunia bring the patient to the physician. The management usually includes thorough washing of the vagina and the vulva with any detergent, such as soap or a liquid germicidal detergent. The parts are dried and then the vagina and the vulva are painted with a solution of equal parts of aqueous methylrosaniline chloride 1 per cent and acriflavine 1 per cent. The area is then dried with an infra-red lamp or an ordinary gooseneck lamp. A pad is applied. At home fungicidal preparations are prescribed for use after an alkalinizing douche containing 2 tablespoons (about 40 cc.) of sodium bicarbonate to 1 quart (946 cc.) of warm water.

Under this regimen the results are usually good and the condition is usually cleared up within a few weeks. However, if

From the Gynecological Departments of the Cook County and Grant Hospitals, the Cook County Graduate School and the Chicago Medical School.

the condition recurs, possible foci of reinfection are sought. The possible female sources of reinfection may be the urethra, bladder, Skene's ducts, gland of Bartholin and cervix. The possible male sources of reinfection may be the prepuce, prostate or bladder.

The following case report is unique in that the dog was proved to be the source of reinfection of the host.

REPORT OF CASE

An adult white woman had been treated for moniliasis for over a year without abatement in her subjective symptoms of profuse discharge, severe itching, burning and soreness. She had previously been checked for her own potential sites of reinfection, but none had been found. The only part of the previous investigation which had been omitted was a check of the husband's genital tract as a potential site of reinfection, and this also proved to be normal.

Since this patient had had excellent gynecologic care during the aforementioned year, with all types of standard local treatment plus antibiotic therapy, we felt that some previously unsuspected site of reinfection might possibly be present.

On detailed history taking, it was disclosed that the patient possessed dogs which on occasion would sleep with her under the covers. Also, when she left her home the dogs were

Fig. 2.—Photomicrograph of smear of canine monilia slightly reduced from × 90 magnification.

locked up in a bathroom and would void in the same tub in which the patient took a daily bath. Culture of the material found in one dog's inflamed vagina and around the other dog's inflamed penis showed dense growth of Candida (figs. 1 and 2).

Isolation of the patient from the dogs and not permitting them in the bathtub, together with suitable office and home treatment soon cleared the Monilia infection without recurrence.

COMMENT

An interesting case of full blown vaginal moniliasis which did not clear under therapy for one year is presented. The usual female and male potential sites of reinfection were normal. It was unique to find that canine genitals were the source of reinfection. Isolation from the dogs plus local therapy cleared the yeast infestation without recurrence.

109 North Wabash Avenue (2).

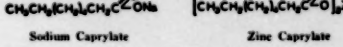
Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN SMITH, M.D., *Secretary.*

CAPRYLIC COMPOUND.—Naprylate (STRASENBURGH).—A preparation containing as its active ingredients sodium caprylate and zinc caprylate. Their structural formulas may be represented as follows:



Sodium Caprylate Zinc Caprylate

Actions and Uses.—Caprylic compound, a mixture of sodium and zinc salts of caprylic acid in specified proportions has been found to be useful for the prevention and treatment of dermatophytosis pedis and for the control of certain other superficial fungous infections of the skin and accessible mucous membranes. It has been shown to be effective topically against infection due to trichophytons, microsporons and Monilia albicans. In moderate concentrations, caprylic acid salts do not produce irritation or sensitization of the skin and are not subject to absorption from the skin or mucous membranes.

Dosage.—Caprylic compound is employed in the proportions of sodium caprylate 10 per cent and zinc caprylate 5 per cent. It is topically applied to the skin in the form of powder or ointment after thorough cleansing of the affected part. The two may be used concomitantly, the powder being applied during the day and the ointment during the night. The powder may also be dusted into the shoes and stockings for the control of susceptible fungous infections involving the feet. The ointment is also used in the treatment of monilial stomatitis or thrush.

Caprylic compound is applied also in the form of vaginal suppositories for the control of monilial vulvovaginitis.

Tests and Standards.—

SODIUM CAPRYLATE.—The sodium salt of caprylic acid.—$C_8H_{15}O_2Na$.—M. W. 166.199

Sodium caprylate occurs as cream-colored granules. It is freely soluble in water and sparingly soluble in alcohol.

Carry out a flame test on the salt: a bright yellow color is imparted to the flame.

Acidify about 100 mg. of sodium caprylate with 10 ml. of sulfuric acid. Extract the solution with two 25 ml. portions of ether. Wash the ether solution with 3 successive 25 ml. portions of water. Evaporate the ether on a steam bath. The residue responds to the tests described in the monograph on Caprylic Acid N. N. R.

Accurately weigh about 0.1 Gm. of sodium caprylate. Dry at 105 C. for 2 hours: the loss in weight does not exceed 2.5 per cent.

Dissolve 1 Gm. of sodium caprylate in 10 ml. of water and add 3 drops of phenolphthalein T. S.: the pink color is discharged by no more than 0.6 ml. of 0.1 *N* sulfuric acid. If no color develops with the indicator, titrate with 0.1 *N* sodium hydroxide: a pink color develops with no more than 0.6 ml. of the sodium hydroxide.

Assay the sodium caprylate as described in the monograph on Sodium Propionate N. F. Each ml. of 0.1 *N* sulfuric acid is equivalent to 0.01662 Gm. of sodium caprylate: the sodium caprylate content is not less than 98 nor more than 102 per cent.

ZINC CAPRYLATE.—(See monograph on Propionate-Caprylate Mixtures.—J. A. M. A. Nov. 26, 1949).

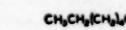
R. J. STRASENBURGH COMPANY, ROCHESTER 4, N. Y.

Ointment Naprylate: 2.5 Gm. tubes. An ointment containing 0.1 Gm. of sodium caprylate and 50 mg. of zinc caprylate in each gram in a water miscible base of wool fat, cetyl alcohol and carbowax 6000.

Powder Naprylate: 60 Gm. sifter cans. A powder containing 0.1 Gm. of sodium caprylate and 50 mg. of zinc caprylate in each gram in corn starch and talc.

Suppositories Naprylate: 3 Gm.

SODIUM CAPRYLATE.—The sodium salt of caprylic acid. The structural formula may be represented as follows:



Actions and Uses.—Sodium caprylate is used for topical application in the treatment of superficial fungous infections of the skin due to trichophytons, microsporons and Monilia albicans. It is not observed to produce irritation or sensitization of the skin after repeated daily use.

Dosage.—Sodium caprylate is employed in the form of solution powder or ointment in concentrations of 10 to 20 per cent. A solution of 20 per cent is topically applied to the affected skin by means of a cotton applicator or other suitable method after thorough cleansing of the involved parts.

Tests and Standards.—

SODIUM CAPRYLATE.—(See monograph on Caprylic Compound, which appears in this issue of THE JOURNAL).

R. J. STRASENBURGH COMPANY, ROCHESTER 4, N. Y.

Solution Sodium Caprylate: 60 cc., 480 cc. and 3.83 liter bottles. An aqueous solution containing 0.2 Gm. of sodium caprylate in each cc.

RIBOFLAVIN-U. S. P. (See New and Nonofficial Remedies 1949, p. 553).
The following dosage forms have been accepted:

AMERICAN PHARMACEUTICAL CO., INC., NEW YORK 18.

Tablets Riboflavin: 10 mg.

THE VALE CHEMICAL CO., INC., ALLENTOWN, PA.

Tablets Riboflavin: 1 mg. and 5 mg.

SODIUM ASCORBATE INJECTION-U. S. P. (See New and Nonofficial Remedies 1949, p. 562).
The following dosage form has been accepted:

TESTAGAR & CO., INC., DETROIT 26

Solution Sodium Ascorbate: 100 mg. per cc., 5 cc. vials. Each cubic centimeter contains sodium ascorbate equivalent to 100 mg. of ascorbic acid.

PYRIDOXINE HYDROCHLORIDE (See New and Nonofficial Remedies 1949, p. 558).
The following dosage form has been accepted:

THE VALE CHEMICAL CO., INC., ALLENTOWN, PA.

Tablets Pyridoxine Hydrochloride: 10 mg.

CHOLINE DIHYDROGEN CITRATE (See New and Nonofficial Remedies 1949, p. 425).
The following dosage form has been accepted:

FLINT, EATON & CO., DECATUR 60, ILL.

Capsules Choline Dihydrogen Citrate: 0.5 Gm.

METHADONE HYDROCHLORIDE (See New and Nonofficial Remedies 1949, p. 30).
The following dosage form has been accepted:

STRONG COBB & COMPANY, INC., CLEVELAND 4

Solution Methadone Hydrochloride: 5 mg., 10 mg. and 15 mg. per cc., 1 cc. Ampins. Preserved with chlorobutanol 0.5 per cent.

STREPTOMYCIN (See New and Nonofficial Remedies 1949, p. 159).
The following dosage form has been accepted:

E. R. SQUIBB & SONS, NEW YORK 22

Streptomycin Hydrochloride: 100 cc. vials equivalent in activity to 5 Gm. of streptomycin base.

METHIONINE (See New and Nonofficial Remedies 1949, p. 415).
The following dosage form has been accepted:

THE DEBRUILLE CHEMICAL CORPORATION, NEW YORK 23.

Powder Metione (*Flavored*): 2 Gm. envelopes. A powder containing in each pliofilm envelope 1.6 Gm. of DL-methionine, 0.16 Gm. of lactose, 0.16 Gm. of sugar and 0.08 Gm. of coffee.

SULFADIAZINE-SULFAMERAZINE COMBINED (See THE JOURNAL, May 7, 1949, p. 21).
The following dosage forms have been accepted:

ABBOTT LABORATORIES, NORTH CHICAGO, ILL.

Dulcet Tablets Duozine: 0.3 Gm. Each tablet contains 0.15 Gm. of sulfadiazine and 0.15 Gm. of Sulfamerazine.

U. S. trademark 301,662 (Dulcet).

Tablets Duozine: 0.5 Gm. Each tablet contains 0.25 Gm. of sulfadiazine and 0.25 Gm. of sulfamerazine.

THE VALE CHEMICAL COMPANY, INC., ALLENTOWN, PA.

Tablets Diamerzine: 0.5 Gm. Each tablet contains 0.25 Gm. of sulfadiazine and 0.25 Gm. of sulfamerazine.

PENICILLIN FOR PARENTERAL USE IN AQUEOUS SOLUTION (See New and Nonofficial Remedies 1949, p. 150).
The following dosage forms have been accepted:

E. R. SQUIBB & SONS, NEW YORK 22

Crystalline Potassium Penicillin G (*Buffered*): 100,000, 200,000, 500,000, 1,000,000 and 5,000,000 unit vials. Buffered with sodium citrate.

Soluble Troches Potassium Penicillin G: 5,000 units.

DIGITOXIN-U. S. P. (See New and Nonofficial Remedies 1949, p. 267).
The following dosage form has been accepted:

PREMO PHARMACEUTICAL LABORATORIES, INC., SOUTH HACKENSACK, N. J.

Tablets Digitoxin: 0.15 mg.

MERCUROPHYLLINE INJECTION-U. S. P. (See New and Nonofficial Remedies 1949, p. 317).
The following dosage form has been accepted:

FLINT, EATON & COMPANY, DECATUR 60, ILL.

Solution Mercurophylline: 1 cc. and 2 cc. ampuls. A solution containing 150 mg. mercurophylline in each cc.

THROMBIN, TOPICAL (See New and Nonofficial Remedies 1949, p. 354).
The following dosage form has been accepted:

PARKE, DAVIS & COMPANY, DETROIT 32.

Thrombin Topical (Bovine Origin): Each vial contains 1,000 units of thrombin topical. Preserved with 0.1 mg. of benzethonium chloride. Three vials packaged with one 6 cc. vial of isotonic sodium chloride diluent, preserved with benzethonium chloride 1:50,000.

NICOTINIC ACID-U. S. P (See New and Nonofficial Remedies 1949, p. 555).
The following dosage form has been accepted:

THE VALE CHEMICAL CO., INC., ALLENTOWN, PA.

Tablets Niacin: 50 mg.

HOMATROPINE METHYLBROMIDE-N. F. (See New and Nonofficial Remedies 1949, p. 258).
The following dosage form has been accepted:

HARROWER LABORATORY, INC., GLENDALE, CALIF.

Tablets Sethyl: 4 mg.

PENICILLIN FOR TOPICAL APPLICATION (See New and Nonofficial Remedies 1949, p. 158).
The following dosage form has been accepted:

BARLOW-MANEY LABORATORIES, INC., CEDAR RAPIDS, IOWA.

Ophthalmic Ointment Calcium Penicillin: 3.54 Gm. tubes. An ointment containing 1,000 units of calcium penicillin in each gram.

THEOPHYLLINE-METHYLGLUCAMINE (See New and Nonofficial Remedies, 1949, p. 329).
The following dosage form has been accepted:

ABBOTT LABORATORIES, NORTH CHICAGO, ILL.

Suppositories Glucophylline (*Rectal*): 0.3 Gm.

U. S. patent 2,161,114; U. S. trademark 334,367.

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SATURDAY, DECEMBER 3, 1949

STUDIES IN PHYSIOLOGY OF THE KIDNEY

The importance of the kidney to the body, as pointed out by Van Slyke[1] in his Mellon Lecture (1947), is reflected in the renal control of the volume and the composition of the extracellular fluid, the glomerular filtration of plasma water and excretion of foreign substances by the renal tubules. About 25 per cent of the human body consists of extracellular fluid with its remarkably constant composition of potassium, sodium chloride and other electrolytes. The maintenance of this constant composition and of the volume is a function of the kidney. The total volume of blood flowing through the kidney per minute is more than one liter. This is about one fifth of the total volume of blood put out by the heart in one minute during rest.

Carl Ludwig, almost a century ago, advanced the filtration-reabsorption concept of renal function. As the blood flows through the glomeruli a part of its water, with its dissolved crystalloid solutes, is filtered out and passes down the tubule. As the fluid passes down the tubule reabsorption of enough water occurs to maintain the extracellular fluids at their normal volume and enough of various salts to maintain the electrolyte composition of this extracellular fluid within remarkably narrow limits.

Ludwig's concept was further elaborated by Cushny, who recognized the ability of the renal tubules to absorb variable amounts of the glomerular filtrate according to the needs of the body. The way in which the tubular cells discriminate between the different constituents of the glomerular filtrate and decide which to reject and which to reabsorb, Van Slyke comments, is phenomenal. The tubules, according to Van Slyke, divide the constituents of the glomerular filtrate into three classes: first, those that the organism needs to retain, such as glucose and amino acids, which are reabsorbed almost completely; second, those metabolites for which the organism has no further use, such as urea, uric acid and creatinine, which are largely rejected and excreted, and, third, those constituents of the glomerular filtrate which must be reabsorbed in varying amounts according to the amounts that are ingested with the food and drink and of which exactly enough must be retained to maintain the constant volume and composition of the extravascular body fluid. Such are the water and the electrolytes.

The energy required for this process is provided by the combustion of organic substances in the tubular epithelium. The rate of oxygen consumption of the kidney shows that it produces more than 100 times the amount of energy that would be required to concentrate the urine if the tubular cells were functioning as perfect engines. The use made of the surplus energy is one of the unsolved problems of renal physiology.

Richards and his associates developed a series of extraordinary methods for ultramicroanalysis of the constituents of the blood plasma. These investigators also developed a technic whereby they could puncture the glomerulus of a frog and withdraw the glomerular filtrate as it was formed. With their ultramicroanalysis they could determine the constituents of the glomerular filtrate in a volume as small as 1 cu. mm. They demonstrated by direct analysis that the glomerular filtrate is a simple filtrate like the plasma. The glomerulus apparently functions as a mechanical filter. In the tubules occurs the selective reabsorption of exactly those constituents in the amounts needed to maintain the volume and composition of the extracellular body of fluid necessary for the proper functioning of the body cells.

Renal functions receive stimuli from other parts of the body, some of them probably in the form of hormones. The pituitary secretes an antidiuretic hormone that stimulates reabsorption of water. When this hormone is lacking, diabetes insipidus results, with a flow of urine that may exceed 20 liters per day. Adrenal cortical hormones regulate the activity of the tubules with regard to reabsorption of sodium and potassium. In Addison's disease the deficit of stimulation to the tubules by this hormone results in uncontrolled excretion of sodium and resultant deficit in the extracellular fluid, which is responsible for part of the symptoms of this disease.

The functional condition of the kidneys can be readily estimated by the urea clearance and the measurement of the concentrating power of the kidneys by the specific gravity method. Whenever the urea clearance falls and remains below 5 per cent of normal, uremia of fatal outcome either occurs or is impending. Renal disease is not the only condition that can cause a decided decrease in renal function. Any condition that causes a temporary decrease in blood flow through the kidneys will cause a corresponding decrease in renal function as measured by the various clearances. Renal failure,

1. Van Slyke, D. D.: Studies of Normal and Pathological Physiology of the Kidney, Thirtieth Mellon Lecture, May 29, 1947, Ann Arbor, Mich. Edwards Brothers, Inc., 1949.

according to Van Slyke, may result from at least four different causes. (1) The nephrons may be destroyed by disease, as in chronic nephritis. (2) Shutdown of the renal blood flow caused either by mechanical obstruction, as in sclerosis or thrombosis, or by the vasoconstriction observed in shock. (3) A third cause of renal failure may be toxic damage to the tubules, such as occurs in poisoning by nephrotoxic substances or by the ischemia of severe and prolonged shock. (4) Fall in blood pressure in the glomeruli below the pressure required for filtration, a point which is below 50 mm. of mercury, will result in a cessation of filtration and in anuria.

DIETARY CARBOHYDRATE AND DENTAL CARIES

The cause of dental caries, allegedly the most common physical defect in the United States and in many other parts of the Western World, has been a controversial question. Students of the problem appear to be divided into two main groups. One of these, the "constitutionalists," believe that the structure of the tooth and internal metabolic and nutritional factors are the primary causative factors in tooth decay. The other group, the "environmentalists," stress the primary importance of local factors in the mouth, such as bacterial acids, the physical state of the food, mechanical abrasion and the protective action of saliva.

Recent investigations appear to support the importance of local factors, particularly bacterial acids, as a primary causative agent in tooth erosion. Furthermore, current studies emphasize the relation of dietary carbohydrate intake to the formation of acids by the oral bacterial flora. One of the chief proponents of this view has been a group of Michigan investigators [1] who have reported repeatedly that the incidence of dental caries in human subjects varies directly with oral Lactobacillus acidophilus counts and, in turn, with the amount of carbohydrate ingested. The restriction of the carbohydrate intake of these subjects has been found repeatedly to reduce the oral Lact. acidophilus counts and to arrest the development of carious lesions. Since Lact. acidophilus is a vigorous acid-producing organism, the inference is that the production of organic acids, particularly lactic acid, by this micro-organism is responsible for erosion of the teeth. Excessive amounts of acids in the mouth can cause dental erosion; this has been shown in experimental animals ingesting certain carbonated beverages or dilute acid solutions [2] and in patients taking excessive amounts of lemon juice for therapeutic purposes.[3] The "constitutionalist" group maintains, however, that the alleged increased incidence of dental caries in subjects ingesting high carbohydrate diets is due to the necessarily lower intake of "protective" foods, especially calcium, phosphorous and vitamin D, and a resulting poorer "nutritive state" of the subject.[4]

Because of the difficulty of control of the critical factors involved in the case of human subjects, it is necessary to turn to animal experimentation for further, perhaps more precise, information. Two species of experimental animals, the cotton rat [5] and the Syrian hamster,[6] have been found suitable for studies of the effect of diet on the incidence of dental caries. The results obtained in the cotton rat [7] show that animals ingesting a high carbohydrate-containing diet uniformly show a much higher incidence of dental caries than those ingesting the same diet but in which protein or fat isocalorically replaces the high carbohydrate content. Furthermore, it has been found that different carbohydrates vary in their caries-producing activity—in descending order, sucrose, dextrin and starch. Similar results have been currently reported with the Syrian hamster.[8] As in the cotton rat, sucrose is most active in producing caries, dextrose next and starch least active. Another point of interest brought out in the studies on the rat [7] is that the incidence of caries in animals ingesting an exclusive milk diet was practically nil.

The general statement thus appears warranted that both the amount and type of carbohydrate ingested may profoundly affect the incidence of dental caries by quantitatively altering the oral flora and, in turn, bacterial acid production. Whether or not the carbohydrate intake is the primary causative factor remains to be determined.

Current Comment

PAYMENTS UNDER BLUE CROSS AND BLUE SHIELD PLANS

Recently the Bureau of Medical Economic Research published Bulletin 71, entitled "How Much Do Blue Cross and Blue Shield Plans Pay?" Other types of voluntary plans were not compared in the study because the necessary data were not available. The general conclusion stated in the bulletin is that the average family subscriber to Blue Cross and Blue Shield plans is reimbursed for approximately four fifths of all the

1. Jay, P.: The Role of Sugar in the Etiology of Dental Caries, J. Am. Dent. A. **27**: 293, 1940; The Reduction of Oral Lactobacillus Acidophilus Counts by the Periodic Restriction of Carbohydrate, Am. J. Orthodontics **33**: 162, 1947.

2. McClure, F. J.: The Destructive Action, in Vivo, of Dilute Acids and Acid Drinks and Beverages on the Rat's Molar Teeth, J. Nutrition **26**: 251, 1943.

3. Stafie, E. C., and Lovestedt, S. A.: Dissolution of Substance of Teeth by Lemon Juice, Proc. Staff Meet., Mayo Clin. **22**: 81, 1947.

4. Boyd, J. D.: Dental Caries as Influenced by Fat Versus Carbohydrate in the Diet, Am. J. Dis. Child. **67**: 278, 1944. Mellanby, M., and Mellanby, H.: Reduction in Dental Caries in Five-Year Old London School Children, Brit. M. J. **2**: 409, 1948.

5. Shaw, J. H.; Schweigert, B. S.; McIntire, J. M.; Elvehjem, C. A., and Phillips, P. H.: Dental Caries in the Cotton Rat: I. Methods of Study and Preliminary Nutritional Experiments, J. Nutrition **28**: 333, 1944.

6. Arnold, F. A.: The Production of Carious Lesions in the Molar Teeth of Hamsters, Pub. Health Rep. **57**: 1599, 1942.

7. Schweigert, B. S.; Shaw, J. H.; Zepplin, M., and Elvehjem, C. A.: Dental Caries in the Cotton Rat: VI. The Effect of the Amount of Protein, Fat and Carbohydrate in the Diet on the Incidence and Extent of Carious Lesions, J. Nutrition **31**: 439, 1946.

8. Shafer, W. G.: The Caries-Producing Capacity of Starch, Glucose, and Sucrose Diets in the Syrian Hamster, Science **110**: 143, 1949.

family hospital bills and one half to three fifths of all the family payments to physicians. The low income family is, on the average, reimbursed for more than these portions of its total payments to hospitals and physicians, whereas the reimbursement of the typical high income family is less than that of the average family. A copy of this bulletin may be obtained by writing to the Bureau of Medical Economic Research, 535 North Dearborn Street, Chicago 10.

HUSBAND TO WIFE BLOOD TRANSFUSION

Except in a dire emergency or after the end of the childbearing period a wife should never receive a blood transfusion from her husband. This is the conclusion drawn by Chown [1] from his study of a case in which this rule was not followed. Mr. and Mrs. R. both belonged to blood group O, Rh positive. She received a transfusion from her husband and one from another O, Rh-positive donor. In 1946 she gave birth to a 5 month macerated fetus and in 1948 at term to a baby with erythroblastosis fetalis and O, Rh-positive blood. A complete necropsy was performed on this baby. The infant's red cells gave a strongly positive Coombs' reaction, indicating that an immune antibody was attached. Also, the mother's serum contained an antibody which agglutinated the red cells of both baby and husband, thus showing that she had been sensitized to something in those cells. This factor was eventually identified as the anti-Kell antibody, first reported by Race and his associates in 1946. From the practical point of view, it seems that the chances of possible sensitization of women to an unusual blood type with consequent unfortunate effects on a future fetus are greatly enhanced by use of the husband's blood in a transfusion. Chown's stand, therefore, seems well taken; no doubt the ready availability of blood banks in most communities greatly lessens the necessity for giving women transfusions with their husbands' blood.

SECOND NATIONAL CONFERENCE ON PHYSICIANS AND SCHOOLS

The Second National Conference on Physicians and Schools was held at Highland Park, Ill., Oct. 13-15, 1949, under the sponsorship of the American Medical Association through its Bureau of Health Education. The delegates agreed that effective health services for school children can be evolved only through joint action by parents, physicians, educators, health department personnel and other citizens involved in voluntary health organizations and interested community agencies. There must be variance in approach and patterns of action to fit the peculiar and different conditions in our heterogeneous states and divergent local communities. Community health councils are sorely needed to provide orderly coordination of efforts to solve school and other community health problems. Delegates to the conference continuously emphasized the merit of having an official committee within the medical society to counsel and advise with the school administrator and the medical director of the health department on school health problems. Problems of providing facilities and trained personnel, of caring for determined health needs, of mental hygiene, of special needs in the rural areas and many other questions were discussed, and significant agreement was achieved among this diversified group of physicians, educators, public health workers and representatives of voluntary agencies. Together with such documents as "Suggested School Health Policies," the 1947 edition of "Physicians and Schools" and "Health Appraisal of School Children," the report of the Second National Conference on Physicians and Schools will offer the best available guiding principles for the development of sound school health services at the local level. Conclusions reached at the national level cannot provide more. The practical application of these principles and effective solution of the problems must be accomplished in each state, in each community and in each school. It now remains for responsible groups through conferences, joint committees, health councils and other appropriate procedures to activate national recommendations in adapted form at the local level. To achieve the established objective the medical profession will have definite responsibilities and must assume appropriate leadership.

POSSIBLE DANGERS OF "FREE SAMPLES"

The practice of sending "free" or "professional" samples of drug products to physicians is widespread in the pharmaceutical industry. At first glance, this would seem to be a harmless form of advertising and probably an excellent method of acquainting physicians with the merit or lack of merit of a product. Unfortunately, however, not all such mail is directed to the physician's office but may go, instead, to his home. The Council on Pharmacy and Chemistry has received complaints from physicians pointing out that small children may be tempted to open and sample the contents of such packages. Frequently, potent drugs, such as thyroid, digitalis, antihistaminics and barbiturates, are sent in this manner, and, should the child of a physician open such a package and ingest the drug, serious or fatal consequences might follow. In preparing mailing lists, pharmaceutical firms could help prevent such tragedies by being certain that all samples are sent to the physician's office rather than to his home. Consideration also should be given to whether it is advisable to send potent drugs through the mail at all. It would certainly be safer to have such drugs given to the physician in person by the professional representative of the firm.

1. Chown, B.: Never Transfuse a Woman with Her Husband's Blood, Canad. M. A. J. 61:419 (Oct.) 1949.

V 14 1949

ORGANIZATION SECTION

Washington Letter

(From a Special Correspondent)

Nov. 28, 1949.

U. S. Doctors Accompany Ewing on European Trip

A White House "news leak" on November 22 disclosed prematurely that Federal Security Administrator Oscar R. Ewing planned a six week visit to England and the Continent for a personal investigation of national health and welfare programs. He was scheduled to leave New York, by air, on December 1, returning to the United States in mid-January. His party will include Dr. W. Palmer Dearing, Deputy Surgeon General of the U. S. Public Health Service; Dr. David E. Price, chief of the Division of Research Grants and Fellowships, National Institutes of Health, and Earl McGrath, Commissioner of Education.

Mr. Ewing told the special correspondent for THE JOURNAL that he expects to confer with Aneurin Bevan, British Minister of Health, and officials of the British Medical Association, among others, while he is in England. The party also will go to Ireland, Scotland, Sweden, Switzerland, Italy and Israel. In all probability the Federal Security Administrator will give an account of his trip early next year to the Senate or House committees considering compulsory health insurance legislation—possibly both committees.

In his first interview on the recent study of Britain's and Sweden's health programs made by House Interstate and Foreign Commerce Committee, Representative Robert Crosser (Democrat, Ohio), chairman, indicated that he felt that socialization of medicine was working out satisfactorily in the countries visited.

"No one we talked to—plain people, doctors and representatives of political parties—would abolish the system now," he said of the British scheme. "Some say they would like to make changes, but even the Conservatives are for continuing the health services on the present general plan."

Commission Issues Isotope Manual

A 201 page guidebook on radioactive and stable isotopes, featuring the most comprehensive bibliography on the subject yet published, has just been issued by the Atomic Energy Commission. Summarizing the first three years of isotope distribution by the Atomic Energy Commission, the report reveals that more than 300 universities, hospitals, clinics and research laboratories have used, or are using, isotopes furnished by the government.

"The number of radioisotope shipments made from January 1 to June 30 of this year is nearly double that for the same period for last year and more than triple the 1947 figure," said the report, explaining that more than 7,000 shipments of radioisotopes have been made since August 1946.

Of the 1,850 published papers listed in the bibliography by title, author and journal, 283 are in the field of medicine alone, exclusive of those in bacteriology, animal physiology, chemistry and other fields. An author index containing more than 1,800 names is also included.

"Isotopes: A Three-Year Summary of U. S. Distribution" is purchasable (45 cents) from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

Deafness and "Athlete's Foot" Devices Cited by FTC

The Federal Trade Commission has taken action against "mega-ear-phone" and "peda spray," the former marketed as a hearing aid and the latter as a preventive and for treatment of "athlete's foot."

Edward Baum, 6114 Carpenter Street, Philadelphia, has been ordered by the Federal Trade Commission to discontinue representing in advertisements that "mega-ear-phone" will enable the deaf to hear and is harmless in the hands of persons not trained in anatomy of the ear. Nonprofessional use of the device and its auxiliary instruments "is attended with the danger of causing serious traumatic injury to the ear, particularly the membrane or drum and certain of the ossicles," according to the commission's findings. "Three scientific witnesses have testified, in effect, that the device has no therapeutic value," the Federal Trade Commission report stated. "Two of such witnesses base their opinions in part on the clinical experience of an Army hospital which used the device for test purposes on a selected cross-section of patients."

In the case of Peda Spray Co., 53 Parke St., Pontiac, Mich., the company entered into a stipulation with the Federal Trade Commission that it will stop unauthorized use of a Navy medical officer's official report on tests conducted at the Marine barracks in Bremerton, Wash. Therapeutic properties of "peda spray solution" and "peda spray dispenser" were not involved in this case, the issue revolving solely about implied endorsement of the products through unauthorized dissemination of the Navy medical officer's report.

Senator Hill Pledges New Fight in Congress

Senator Lister Hill (Democrat, Alabama), delivering the dedicatory address at George H. Lanier Memorial Hospital at Langdale, Ala., November 16, promised that he will renew his efforts next year to secure congressional enactment of the Voluntary Health Insurance bill which he introduced last spring. The new hospital, first to be approved under the Hill-Burton hospital construction law, will be integrated with the health insurance plan of West Point Manufacturing Co.

"This integration of your hospital and health insurance facilities is especially gratifying to me because it carries out the very basic objective of the Voluntary Health Insurance Bill," said Senator Hill. "What you are doing bears out our faith in the voluntary methods of our democracy and supports our confidence in the ability of the people to act for themselves and to provide medical care for themselves, without compulsion and without reliance on a socialized system."

NSRB Health Group Gets Three New Consultants

A physician, a dentist and a veterinarian, all in federal service, have been added to the part time consultant staff of the Health Resources Division (formerly Medical Service Division) of the National Security Resources Board. They are Dr. John R. McGibony, chief of the Division of Medical and Hospital Resources, U. S. Public Health Services; Dr. Bruce D. Forsyth, Assistant Surgeon General in charge of U. S. Public Health Service dental activities, and Dr. Albert R. Miller, of the Department of Agriculture.

Coming Medical Meetings

American Medical Association Clinical Session, Washington, D. C., December 6-9. Dr. George F. Lull, 535 N. Dearborn, St., Chicago, Secretary.

American Society of Anesthesiologists, New York, Hotel New Yorker, Dec. 7-10. Dr. Curtiss B. Hickcox, 188 W. Randolph St., Chicago 1, Secretary.

International Post-Graduate Medical Assembly of Southwest Texas, San Antonio, Municipal Auditorium, Jan. 24-26. Dr. John J. Hinchey, 424 Moore Bldg., San Antonio, Secretary.

Puerto Rico, Medical Association of, San Juan, Dec. 14-18. Dr. Juan Basora-Deliliz, 1459 America St., Santurce, Secretary.

Radiological Society of North America, Cleveland, Dec. 4-9. Dr. Donald S. Childs, 713 E. Genesee St., Syracuse 2, N. Y., Secretary.

Southern Surgical Association, Hot Springs, Va., The Homestead, Dec. 6-8. Dr. John C. Burch, 2112 West End Ave., Nashville 5, Tenn., Secretary.

PROGRAM OF THE AMERICAN MEDICAL ASSOCIATION FOR THE ADVANCEMENT OF MEDICINE AND PUBLIC HEALTH

A Federal Department of Health

1. Creation of a Federal Department of Health of Cabinet status with a Secretary who is a Doctor of Medicine, and the coordination and integration of all Federal health activities under this Department, except for the military activities of the medical services of the armed forces.

Medical Research

2. Promotion of medical research through a National Science Foundation with grants to private institutions which have facilities and personnel sufficient to carry on qualified research.

Voluntary Insurance

3. Further development and wider coverage by voluntary hospital and medical care plans to meet the costs of illness, with extension as rapidly as possible into rural areas. Aid through the states to the indigent and medically indigent by the utilization of voluntary hospital and medical care plans with local administration and local determination of needs.

Medical Care Authority with Consumer Representation

4. Establishment in each state of a medical care authority to receive and administer funds with proper representation of medical and consumer interest.

New Facilities

5. Encouragement of prompt development of diagnostic facilities, health centers and hospital services, locally originated, for rural and other areas in which the need can be shown and with local administration and control as provided by the National Hospital Survey and Construction Act or by suitable private agencies.

Public Health

6. Establishment of local public health units and services and incorporation in health centers and local public health units of such services as communicable disease control, vital statistics, environmental sanitation, control of venereal diseases, maternal and child hygiene and public health laboratory services. Remuneration of health officials commensurate with their responsibility.

Mental Hygiene

7. The development of a program of mental hygiene with aid to mental hygiene clinics in suitable areas.

Health Education

8. Health education programs administered through suitable state and local health and medical agencies to inform the people of the available facilities and of their own responsibilities in health care.

Chronic Diseases and the Aged

9. Provision of facilities for care and rehabilitation of the aged and those with chronic disease and various other groups not covered by existing proposals.

Veterans' Medical Care

10. Maintenance of existing high standards of medical care for veterans, including extension of facilities where the need can be shown and, where practicable, care of the veteran in his own community by a physician of his own choice.

Industrial Medicine

11. Greater emphasis on the program of industrial medicine, with increased safeguards against industrial hazards and prevention of accidents occurring on the highway, at home and on the farm.

Medical Education and Personnel

12. Adequate support with funds free from political control, domination and regulation of the medical, dental and nursing schools and other institutions necessary for the training of specialized personnel required in the provision and distribution of medical care.

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GOVERNMENT SERVICES

ARMY

ANNUAL MEETING OF MEDICAL CONSULTANTS

Dr. Daniel C. Elkin, professor of surgery, Emory University, Atlanta, Ga., was elected president of the Society of U. S. Medical Consultants in World War II at their annual meeting in Washington, D. C., November 14. The society is composed of wartime consultants to the Army, and its advisory council meets regularly with the Surgeon General. Dr. Elkin, who had been vice president, succeeds Dr. Henry M. Thomas, associate professor of medicine, Johns Hopkins University, Baltimore. Dr. Thomas was elected to the advisory council, along with Dr. Winchell McK. Craig, professor of neurologic surgery, Mayo Clinic, Rochester, Minn. The four other council members were reelected: Drs. Alfred R. Shands Jr., medical director, Alfred I. DuPont Institute, Wilmington, Del.; William S. Middleton, dean of the University of Wisconsin Medical School, Madison; Frank B. Berry, clinical professor of surgery, Columbia University, New York, and I. Ridgeway Trimble, associate professor of surgery, Johns Hopkins University, Baltimore.

The executive session was attended by 91 members, before whom Major Gen. R. W. Bliss, the Surgeon General, presented the annual "Progress Report of the U. S. Army Medical Department." Discussion periods were held, as follows:

"Current Army Medical Policies," led by Gen. Wade H. Haislip, Vice Chief of Staff, U. S. Army.
"The Supporting Role of Our Consultants," led by Major Gen. George E. Armstrong, Deputy Surgeon General.
"National Economy, Unification and the Physician," led by Dr. Richard L. Meiling, director of medical services, Office of the Secretary of Defense.
"Progress in Medical Department Research and Development," led by Col. William S. Stone (MC), chairman, Medical Research and Development Board, the Surgeon General's office.
"History and Current Status of Basic Science Course," led by Col. Walter H. Mournsund (MC), director, Basic Science Department, Army Medical Department Research and Graduate School.
"Problems of the Physician in Atomic Warfare," led by Col. James P. Cooney (MC), of the Atomic Energy Commission.

Secretary of the Army Gordon Gray delivered the principal address at the society's annual dinner.

SURGEON GENERAL BLISS RECEIVES FRENCH AWARD

At a ceremony in the Surgeon General's office, November 10, the French Legion of Honor, officer class, was awarded to Major Gen. Raymond W. Bliss, the Surgeon General. The award was presented by Gen. Lucian Jame, Surgeon General of the French Army. General Bliss was cited for "unselfish devotion to duty" and "outstanding professional and administrative ability" in connection with his wartime assignments as chief of operations service, Assistant Surgeon General and Deputy Surgeon General. He was credited with "responsibility for the planning and development of all phases of Medical Department Army personnel, supervision of hospitalization and transportation of sick and wounded Army personnel, personnel planning and control, specialization of facilities and postwar planning."

NAVY

DUTY UNDER INSTRUCTION

The following medical officers have been nominated for duty under instruction in the Graduate Medical Training Program:

Comdr. Ralph W. Geise, to a fellowship in children's orthopedics, Duke University, Durham, N. C.
Lieut. Comdr. Sherman M. Peabody, to a residency in ophthalmology, Naval Hospital, Philadelphia.
Lieut. Eugene V. Reilly, to instruction in aviation medicine, Naval School of Aviation Medicine and Research, Pensacola, Fla.
Lieut. (jg) Charles W. Lewis Jr., to a residency in urology, Naval Hospital, San Diego, Calif.
Lieut. (jg) William D. Rummel, to instruction in aviation medicine, Naval School of Aviation Medicine and Research, Pensacola, Fla.
Lieut. (jg) Francis J. Sweeney, to instruction in aviation medicine, Naval School of Aviation Medicine and Research, Pensacola, Fla.
Lieut. (jg) Martin G. Webb Jr., to instruction in aviation medicine, Naval School of Aviation Medicine and Research, Pensacola, Fla.
Lieut. (jg) William K. Woodard, to a residency in pediatrics, University of Colorado Medical Center, Denver.
Lieut (jg) John J. Dempsey, to a residency training in internal medicine, Naval Hospital, Bethesda, Md.
Lieut. (jg) Walter F. Hansen, to a residency in radiology, Naval Hospital, Long Island, N. Y.
Lieut. (jg) Jerome L. Heard, to a residency in pathology, Naval Hospital, San Diego, Calif.
Lieut. (jg) Chester L. Klein, to a residency in internal medicine, Naval Hospital, Oakland, Calif.
Lieut. (jg) John R. McLaren, to a residency in obstetrics and gynecology, Naval Hospital, Philadelphia.
Lieut. (jg) Charles J. Molnar Jr., to instruction in pediatrics, University of Pennsylvania Graduate School of Medicine, Philadelphia.
Lieut (jg) William R. Stevenson, to instruction in aviation medicine, School of Aviation Medicine and Research, Pensacola, Fla.

MONTHLY MEDICAL MEETINGS

Dr. Donald Munro, Boston, surgeon in chief of the department of neurosurgery at the Boston City Hospital, was the guest lecturer, October 28, at the National Naval Medical Center, Bethesda, Md. Dr. Munro's lecture, "Rehabilitation of Paraplegics," was the second in the monthly series sponsored by the medical officer in command at the Naval Medical School.

The third in the current series of guest lectures at the Naval Medical School, Bethesda, Md., was presented November 18 by Dr. William W. Scott, professor of urology, Johns Hopkins University Medical School, on the prostate gland.

PERSONAL

Rear Admiral Clifford A. Swanson (MC, USN), the Surgeon General, was the Navy Department representative in the United States Military delegation attending the twelfth International Congress of Military Medicine and Pharmacy, October 23 in Mexico City.

Comdr. John S. Quigley (MC, USNR), Piedmont, Calif., and Lieut. (jg) Eugene P. Yoklavich (MC, USNR), San Diego, Calif., have been recalled to active duty at their own request.

Comdr. T. A. Harris, chief, Neuropsychiatry Branch, Bureau of Medicine and Surgery, recently addressed the Medical Society of St. Elizabeth's Hospital, Washington, on the "Frontiers of Preventive Psychiatry."

Comdr. James A. Fields has been certified by the American Board of Otolaryngology.

Capt. Ashton Graybiel, director of research, Naval School of Aviation Medicine and Research, Pensacola, Fla., and Commanders Harold Smedal of the Bureau of Medicine and Surgery, S. W. Eyer, of the Naval Medical Research Institute, Bethesda, Md., and Kenneth Scott of the Aero Medical Laboratory, Naval Air Material Center, Philadelphia, represented the Navy at the International Symposium on High Altitude Biology in Lima, Peru, November 23-30.

Lieut. (jg) Stanley E. Willis II, San Mateo, Calif., was recently appointed to the regular Navy Medical Corps.

Lieut. Bruce H. Smith Jr. (MC) has successfully passed the examination of the American Board of Pathology. Lieutenant Smith is presently on duty at the New England Deaconess Hospital, Boston.

Lieut. (jg) Carmen J. Scarpellino (USNR) of South Amboy, N. J., has been recalled to active duty and will be assigned to duty under instruction in aviation medicine at the School of Aviation Medicine and Research, Pensacola, Fla.

Lieutenants (jg) Frank F. Allen, Rochester, N. Y., and Harvey O. Randel, Camp Hill, Pa., reserve medical officers, have been appointed to the regular navy medical corps.

PUBLIC HEALTH SERVICE

FEDERAL FUNDS FOR HOSPITALS

When the Federal Hospital Council met in Washington, D. C., on November 8, the council considered the new responsibilities assigned it by Congress for programs of research and demonstrations related to hospital services and the coordination of hospitals. Three new members have been appointed to the council: Jonathan Daniels, editor of *The News and Observer*, Raleigh, N. C.; Rev. Donald A. McGowan, National Catholic Welfare Council, Washington, D. C., and Anthony J. J. Rourke, M.D., superintendent of the Stanford University Hospital, San Francisco. Other members of the Council are Robin C. Buerki, M.D., University of Pennsylvania, Philadelphia; Albert W. Dent, Dillard University, New Orleans; Nelson H. Cruikshank, American Federation of Labor, Washington, D. C.; Joseph W. Fichter, Ohio State Grange, Columbus, Ohio, and James E. Paullin, M.D., Emory University, Georgia.

The Federal Hospital Council was established by the Hospital Survey and Construction Act to advise and assist in the administration of the law. The last Congress made changes in the allotment provisions of the law and increased the yearly contract authorization to a total of $150,000,000, instead of the previous $75,000,000. State allotments under the increased authorization are shown in the table.

Allotments for Hospital Construction, Fiscal Year Ending June 30, 1950

(Title VI, Public Health Service Act as Amended)

State or Territory	Allotment
Alabama	$5,140,275
Alaska	200,000
Arizona	852,521
Arkansas	3,776,391
California	5,147,909
Colorado	1,022,875
Connecticut	1,016,289
Delaware	200,000
District of Columbia	490,555
Florida	2,895,128
Georgia	5,248,356
Hawaii	500,884
Idaho	627,378
Illinois	4,723,670
Indiana	3,838,365
Iowa	3,051,411
Kansas	2,044,104
Kentucky	4,933,095
Louisiana	4,239,701
Maine	1,069,132
Maryland	1,585,285
Massachusetts	3,312,332
Michigan	5,134,736
Minnesota	3,414,126
Mississippi	4,469,485
Missouri	4,340,297
Montana	345,499
Nebraska	1,367,926
Nevada	200,000
New Hampshire	636,060
New Jersey	2,923,571
New Mexico	812,552
New York	5,942,249
North Carolina	6,414,042
North Dakota	473,041
Ohio	5,979,473
Oklahoma	3,683,879
Oregon	1,544,418
Pennsylvania	9,241,058
Puerto Rico	4,619,631
Rhode Island	522,590
South Carolina	3,693,309
South Dakota	585,912
Tennessee	4,977,256
Texas	9,494,344
Utah	754,320
Vermont	421,695
Virginia	4,062,611
Virgin Islands	57,034
Washington	1,834,829
West Virginia	2,787,048
Wisconsin	3,105,901
Wyoming	245,652
Total	$150,000,000

FELLOWSHIPS FOR STUDY ABROAD

The World Health Organization offers to the United States an allotment for foreign study in the field of health of nine to twelve fellowships available in 1950. A Fellowship Selection Board has been set up by the Surgeon General, made up of Dr. Joseph W. Mountin, U. S. Public Health Service; Dr. Hugh Leavell, American Public Health Association, and Dr. Walter A. Bloedorn, Association of American Medical Colleges. Dr. H. R. O'Brien, U. S. Public Health Service, is secretary.

For 1950, applications will be considered in the fields of public health administration, malaria, tuberculosis, maternal and child health, venereal diseases, sanitation, nutrition and mental health. Work in clinical or basic medicine or in branches of public health not mentioned here may also be considered if needed for teaching or important service.

Applicants must be engaged in some form of full time public health work, including medical or nursing education. Special consideration will be given those in charge of training centers or teachers in medical or other schools (especially in preventive medicine or tropical diseases). Knowledge of the language of the country to be visited is valuable. In general, nonfederal workers will be given preference.

Grants are for periods of two or three months for observation and up to twelve months for study. The World Health Organization provides transportation across the ocean and in the country visited, with a stipend of $200 a month for those studying in one place and $300 for those moving about. Application blanks may be obtained from the Educational Programs Branch, Office of International Health Relations, U. S. Public Health Service, Washington, D. C. Applications must be filed in triplicate by March 1, 1950.

EXAMINATION FOR THE REGULAR CORPS

A competitive examination for appointment of medical officers in the Regular Corps of the Public Health Service will be held at a number of points throughout the United States, Jan. 9-11, 1950. Appointments will be made in the grades of assistant surgeon (first lieutenant) and senior assistant surgeon (captain). Appointments are permanent and provide opportunities to qualified physicians for a lifetime career in clinical medicine, research and public health. Applications must be received no later than Dec. 12, 1949. Application forms may be obtained from the Surgeon General, U. S. Public Health Service, Federal Security Agency, Washington 25, D. C. Attention: Division of Commissioned Officers.

CONFERENCE ON LOBOTOMY

Criteria for selection of psychotic patients for psychosurgery was the theme of a conference financed by the National Institute of Mental Health in New York City, November 17-18. About 25 psychosurgeons, neurosurgeons, psychiatrists and other specialists who form the Research Conference Group on Psychosurgery met under the chairmanship of Dr. Fred A. Mettler, associate professor of anatomy, College of Physicians and Surgeons, Columbia University. To determine to what extent lobotomy is being used at present and what research is going forward in this field, questionnaires were sent to all mental hospitals and to all medical schools in the country, and the results were presented at the conference.

MARINE HOSPITAL MEDICAL AND DENTAL ASSOCIATION

The fourth Inter-Hospital Clinical Meeting of the Marine Hospital Medical and Dental Association will be held at Cleveland on May 11-13, 1950, under the presidency of Dr. Oliver C. Williams, chief of the surgical service, U. S. Marine Hospital, New Orleans. The Cleveland chapter will be host. The business session will be held on Thursday, May 11, and the scientific program on May 12-13.

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FUNDS FOR CONSTRUCTION OF CANCER RESEARCH FACILITIES

Following recommendations by the National Advisory Cancer Council and approval by the Surgeon General, construction grants for cancer research facilities totaling $2,174,900 were announced November 17 by the Federal Security Administrator. A total of $15,728,000 in grants has been made for construction of cancer research facilities since 1947, when Congress made the first appropriation for this purpose. The twelve construction grants announced November 17 are as follows:

Boston University School of Medicine, $49,900.
Duke University, Durham, N. C., $200,000.
George Washington University, Washington, D. C., $250,000.
Loyola University, Stritch School of Medicine, Chicago, $200,000.
Ohio State University, Columbus, $300,000.
Oklahoma Medical Research Foundation, Oklahoma City, $125,000.
University of Pittsburgh, $200,000.
University of Southern California, Los Angeles, $200,000.
Stanford University, California, $100,000.
University of Texas, M. D. Anderson Hospital for Cancer Research, Houston, $100,000.
Wayne University College of Medicine and Detroit Institute of Cancer Research, Detroit, $150,000.
Western Reserve University and University Hospitals of Cleveland, $300,000.

EXAMINATION FOR PHARMACISTS

A competitive examination will be held March 6-8, 1950 for the appointment of pharmacists in the Regular Corps of the Public Health Service. Examinations will be held at a number of points throughout the United States. Appointments from the examination will be in the grades of junior assistant pharmacist, assistant pharmacist and senior assistant pharmacist.

Information may be obtained by writing to the Public Health Service, Federal Security Agency, Washington 25, D. C. Attention: Division of Commissioned Officers. Applications must be received by Jan. 23, 1950.

PROBLEMS OF FILARIASIS

Sir Philip Manson-Bahr conducted a seminar on "Problems of Filariasis" December 1 at the National Institutes of Health, Bethesda, Md. Dr. Manson-Bahr is en route to Fiji, where he will join his son, also a specialist in tropical diseases, in further studies of filariasis. It was in Fiji, 40 years ago, that he had his first experience with field research as director of the Stanley Research Expedition.

VETERANS ADMINISTRATION

CONFERENCE ON TREATMENT OF TUBERCULOSIS

The Veterans Administration sponsored a conference in Atlanta, Ga., November 10-13, which was attended by some 200 tuberculosis specialists of the nation. The object was to study the latest reports on the effectiveness of streptomycin and other drugs in the treatment of tuberculosis. Data from 44 active study units in Veterans Administration, Army and Navy hospitals were presented for evaluation. Among those scheduled to speak at the conference were:

Dr. Kirby S. Howlett Jr., New Haven, Conn., president, American Trudeau Society.
Dr. Esmond R. Long, head of the Phipps Institute Philadelphia, and Dr. Herbert Mantz, Kansas City, Mo., both past presidents of the National Tuberculosis Association.
Dr. H. Corwin Hinshaw, professor of clinical medicine, Stanford University, San Francisco.
Dr. J. Burns Amberson, New York, professor of clinical medicine at Columbia University.
Dr. Walsh McDermott, New York, managing editor of the American Review of Tuberculosis.
Dr. Walton Van Winkle, Chicago, of the Council on Pharmacy and Chemistry of the American Medical Association.
Dr. H. McLeod Riggins, New York, co-editor of a book on streptomycin, and Dr. Ernest Tanner, Zurich, Switzerland.

ADVISORY COMMITTEE ON RADIOISOTOPES

In developing its radioisotope program the Veterans Administration had established research units as of September 26 in 12 hospitals. Dr. George Lyon, chief, Radioisotopes Section, told the Central Advisory Committee on Radioisotopes at its third annual meeting that four new units will be established during the current fiscal year. The committee reviewed the progress of the program carried out by the Radioisotope Section and considered future activities of the section. The committee considered also the individual reports of the research units, the question of releasing information to the public, relationship of the units to national security and the relationship of the units to the Veterans Administration education and training program.

The committee members present at the meeting were:

Dr. Shields Warren, chief, Division of Biology and Medicine, Atomic Energy Commission.
Dr. Stafford Warren, dean, School of Medicine, University of California at Los Angeles.
Dr. Hymer Friedell, professor of radiology, Western Reserve University, School of Medicine, Cleveland.
Dr. Hugh Morgan, professor of medicine, Vanderbilt University School of Medicine, Nashville.
Dr. Perrin H. Long, professor of preventive medicine, Johns Hopkins University School of Medicine, Baltimore.

ORTHOPEDIC CLINIC TEAMS

The Veterans Administration announces that teams have been set up in 25 cities to improve the care of disabled veterans requiring artificial limbs or other orthopedic devices. These teams are operating on an outpatient basis and only for veterans with service-connected disabilities. Dr. Paul B. Magnuson, chief medical director, said the basic organization is composed of an orthopedic consultant or attending doctor; the chief of the orthopedic service in the regional office; the chief of the Prosthetic and Sensory Aids Unit in the Regional Office; the chief of the Physical Medicine Rehabilitation Unit in the regional office, or a physiatrist on a consultant or attending basis, and a physical therapist. Local orthopedic or prosthetic manufacturers under contract to the Veterans Administration also are invited to attend the clinics, especially when appliances purchased from them are to be examined or fitted. The team system speeds up service to veterans, improves fittings of artificial limbs and orthopedic devices and helps the veteran to learn how he can best use and maintain the equipment furnished.

Veterans who are in need of the services of these clinics receive transportation to and from their homes to one of the nearest of the following regional offices:

Atlanta, Ga.; Boston; Chicago; Dallas, Texas; Detroit; St. Paul; Kansas City, Mo.; Los Angeles; Philadelphia; New York City; Pittsburgh; Portland, Ore.; San Antonio, Texas; San Diego, Calif.; San Francisco; St. Louis; Seattle; Salt Lake City; Louisville, Ky.; Washington, D. C.; New Orleans; Denver, and Nashville, Tenn.

In Honolulu, Hawaii, and in Cleveland the clinics are temporarily located in Queens Hospital, Honolulu, and the Veterans Administration Hospital, Cleveland, respectively.

PERSONAL

Dr. George T. Denny became manager of the Veterans Administration Hospital at West Roxbury, Mass., October 2, succeeding Dr. John T. Bennett, who resigned. Dr. Denny received his M.D. from Harvard, served his internship, residency and fellowship at Peter Bent Brigham Hospital in Boston and, except during service in both world wars, was in private practice in Boston until 1946. He has been certified by the American Board of Internal Medicine.

Dr. Earle T. Norman has been assigned as manager of the Veterans Administration Hospital at Amarillo, Texas, to succeed Dr. George Littell, who has been assigned manager of the Veterans Hospital in Wichita, Kan.

Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

CALIFORNIA

Hospital Approved for Intern Training.—At the last meeting of the Council on Medical Education and Hospitals October 22 the Southern Pacific General Hospital in San Francisco was approved by the Council for intern training.

The Doheny Eye Lecture.—The third Estelle Doheny Eye Lecture will be given by Dr. Phillips Thygeson in Los Angeles, Jan. 17, 1950 on "The Etiology and Treatment of Phylctenular Keratitis." Dr. Thygeson is associate clinical professor of ophthalmology at the University of California Medical School in San Francisco. The lecture, a part of the activities of the Estelle Doheny Foundation, is named in honor of the foundation's benefactress.

Personals.—Dr. James E. Jones, who has been in private practice in Compton, has been appointed director of the Tulare County General Hospital.——Dr. Robert Wartenberg, associate clinical professor of neurology, University of California Medical School, San Francisco, has been elected Honorary Charter Member of the newly founded Spanish Neurological Association and honorary president of the inaugural congress of this association to be held in Barcelona in December.——Dr. Anthony J. J. Rourke, superintendent of Stanford University Hospitals in San Francisco, has been appointed a member of the Federal Hospital Council.

ILLINOIS

Public Health Appointments.—Dr. Edward A. Piszczek, Chicago, has resigned after 9 years' service as director of the Cook County Department of Public Health to become tuberculosis controller of Suburban Cook County. Dr. Norman J. Rose, former health officer for four southern Illinois districts, has been appointed assistant chief of the Division of Tuberculosis Control in the State of Illinois Department of Public Health. He is a graduate of Northwestern University Medical School, Chicago (1933), and received his master's degree in public health from the University of Minnesota, Minneapolis.

Chicago

Award Student Scholarships.—The Rachelle S. Yarros Scholarship has been awarded to Glen W. Shols, a second year student at the University of Illinois College of Medicine, Chicago. The scholarship fund, which was established at the University by Victor S. Yarros of LaJolla, Calif., husband of the late Dr. Rachelle S. Yarros, carries a stipend of $200. Needy and deserving students in the college of medicine are eligible for the scholarship.—— The Ralph C. Berkelhamer scholarship for 1949-1950 of the University of Illinois College of Medicine, Chicago, has been awarded to Ruth B. Geyer, third year student at the university. The scholarship, established three years ago in honor of the late Dr. Ralph C. Berkelhamer, carries a stipend of $100. Students who have completed at least one year in the College of Medicine are eligible for the scholarship.

Dr. Youmans Returns to Vanderbilt.—Dr. John B. Youmans, dean of the University of Illinois College of Medicine since 1946, has resigned to accept the deanship of medicine at Vanderbilt University, Nashville, Tenn., effective March 1, 1950. Dr. Youmans has also served as medical director of the University of Illinois Research and Educational Hospitals and the Illinois Eye and Ear Infirmary. In accepting the deanship Dr. Youmans returns to the university with which he was associated from 1927 to 1946. He was an assistant professor of medicine for one year and an associate professor of medicine until 1942, when he was made a professor. From 1930 to 1946 he was director of postgraduate instruction. Dr. Youmans is a graduate of Johns Hopkins University School of Medicine, Baltimore, 1919. He joined the faculty of the University of Michigan Medical School as instructor of internal medicine in 1922 and was promoted to assistant professor of medicine in 1924, serving for one year.

New Faculty Appointments.—The Chicago Medical School has announced the following new faculty appointments: Dr. Roscoe C. Giles, assistant professor of surgery; Drs. Erwin M. Kammerling, Sherman R. Kaplan, Solomon L. Pearlman, Sylvan D. Solarz, Milton Wohl, Melvin R. Salk and Jerome H. Hirschmann as assistants in medicine, Dr. Meyer J. Steinberg as associate in medicine and Drs. Joseph C. Meyer and Irving H. Zitman as instructors in medicine. Dr. Walter A. Adams will become associate in psychiatry and Dr. Meyer Kruglik instructor in psychiatry. Dr. Herman Josephy will become associate professor of neurology, Dr. Milton A. Tinsley associate professor of neurosurgery, Dr. Harold Koenig assistant professor of anatomy, Dr. Hans Elias assistant professor of microscopic anatomy and Dr. Kurt Stern associate in pathology; Israel Becker, instructor in medicine; Bernard E. Cohler, assistant in urology; Marvin S. Freilich, instructor in radiology; Lawrence S. Mann, instructor in surgery; Vera A. P. Morkovin, assistant in surgery; Laurence H. Rubenstein, instructor in thoracic surgery; S. Lloyd Teitelman, instructor in surgery, and Philip Warsaw, assistant in medicine.

KANSAS

Personal.—Dr. Haddon Peck, St. Francis, president of the Kansas Medical Society, has been appointed by Governor Frank Carlson as a member of the Kansas State Board of Health to fill the vacancy caused by the resignation of Dr. Hugh Hope, Hunter.

Medical Center Bulletin.—The first issue of the *Kansas Medical Center Bulletin* appeared in October as a four page publication of the University of Kansas School of Medicine, Lawrence-Kansas City. It is published bimonthly and will be distributed to alumni and Kansas doctors. The editor is Dr. Glen R. Shepherd.

University Appointments.—The University of Kansas School of Medicine, Lawrence-Kansas City, has announced the following appointments to the staff: Drs. Oscar W. Davidson, associate, department of surgery; Stanley R. Friesen, assistant professor of surgery; LeRoy Goodman, associate in gynecology and obstetrics; Merill T. Eaton Jr. and Morton Jacobs, associates in psychiatry and neurology; John H. Mayer Jr. and Michael M. Donovan, instructors in surgery; Frank X. Dwyer and Robert J. Murphy, assistants in dermatology, and Charles A. Crockett, assistant in ophthalmology.

MICHIGAN

University Grants.—The University of Michigan, Ann Arbor, announces the award of research grants to faculty members amounting to $105,906. Of this sum, $87,413 was from the Horace H. Rackham Fund. Among the subjects for research are the endocrine glands and behavior problems in children, functional breathing capacity of the lung and the growth and regeneration of endosperms in culture.

Kresge Gift for Research Institute.—A $3,000,000 grant from the Kresge Foundation of Detroit has been made to the University of Michigan to be used for the construction of a medical research institute. The institute is one of five new units planned by the university to complete its enlarged medical center. Other units include an outpatient clinic, a maternity hospital, which is due to be completed in a few months, a medical and nursing education building and a children's and infants' hospital.

Close School of Occupational Health.—Termination of the Wayne University School of Occupational Health and the resignation of Dr. Raymond Hussey, dean of the school, were recently announced. The School of Occupational Health was established on June 27, 1944. The establishment and continuation of the school were conditioned on financial support pledged by the Medical Science Center of Wayne University, which reports that funds are not available for this project beyond the original five year period.

MINNESOTA

Bentson Memorial Fund.—The establishment of the James Hoffman Bentson Fund to provide a memorial for the late Dr. James H. Bentson at Mount Sinai Hospital, Minneapolis, to be completed some time in 1950, was announced on September 26. Dr. Bentson, a fellow at the Mayo Clinic, died on June 28 in New York. His parents, Mr. and Mrs. Mort Bentson of St. Paul, made an initial contribution of $5,000 to the fund.

A County Society Officer for 54 Years.—Fifty-four years in office, fifty-three of them as secretary-treasurer and one as president of the Wabasha County Medical Society, is the record held by Dr. William F. Wilson of Lake City. In 1896 Dr. Wilson was elected secretary-treasurer of the society for the first time. Since then he has been reelected each year, with the exception of one year when he served as president. He began his fifty-fourth term as an officer on October 6.

Dr. Harrison to Give Jackson Lecture.—Dr. Tinsley N. Harrison, professor of medicine, Southwestern Medical College, Dallas, Texas, will deliver the annual Clarence M. Jackson Lecture Jan. 6, 1950 at the University of Minnesota Medical School, Minneapolis, on "The Evaluation of Cardiac Murmurs." Dr. Harrison will also participate in a continuation course in cardiovascular diseases, Jan. 5-7, 1950, when he will discuss "The Cardiac Arrythmias" and conduct a diagnostic conference.

NEW MEXICO

Personal.—Dr. James T. Pebworth of Tyrone, formerly a member of the staff of the Veterans Administration Hospital at Fort Bayard, has been appointed manager of the Silver City General Hospital.

State Society Creates Board of Supervisors.—The first meeting of the board of supervisors of the New Mexico Medical Society was held recently in Albuquerque. Dr. LeGrand Ward, Santa Fe, was elected chairman; Lucien G. Rice, Albuquerque, vice chairman, and C. Pardue Bunch, Atresia, secretary. The general purpose of the board is to act as a grand jury and not as a judicial body for investigating complaints and/or initiating investigations concerning professional conduct and ethical deportment. It will meet every six weeks or on call of the secretary.

NEW YORK

Postgraduate Lectures.—Postgraduate instruction has been arranged for the Schoharie County Medical Society meeting at 4 o'clock Tuesday afternoons at the Cobleskill High School, Cobleskill. On December 13 Dr. Frederick S. Wetherell, Syracuse, will speak on goiter and on December 20 Dr. William W. Street, Syracuse, will discuss "Clinical Diagnosis and Treatment of Cardiac Arrythmias." The Geneva Academy of Medicine meeting in the Bellhurst, Geneva, December 19 at 8:30 p. m. will hear Dr. Foster Kennedy, New York, speak on "Psychiatric and Neurological Problems in General Practice." Programs have been arranged by the Medical Society of the State of New York with the cooperation of the New York State Department of Health.

War Memorial Scholarships.—As a tribute to 34 members who lost their lives while serving as medical officers in World War II, the Medical Society of the State of New York announces the award of the first of a series of scholarships to provide for the education of their children. Ten young men and women, most of them now enrolled in schools and colleges, were the first to benefit under the provisions of a War Memorial Fund, created by the state society by a $12 special assessment on each of its 23,000 members. There are 65 children of deceased medical officers from New York State eligible to benefit under the fund. More than 5,100 members of the state society were in service during the last war. Dr. James F. Rooney of Albany, chairman of the War Memorial Committee, estimated that the fund will continue in operation until 1972 and will entail a total expenditure up to $328,000. Scholarships will be awarded annually to each eligible survivor on completion of high school education for a collegiate or postgraduate professional course, up to the age of 25. Other members of the War Memorial Committee are Drs. Edward R. Cunniffe, of the Bronx; Maurice J. Dattelbaum, Brooklyn, and Fenwick Beekman of New York.

New York City

Third Harvey Lecture.—Dr. Lyman C. Craig, member of the Rockefeller Institute for Medical Research, will deliver the third Harvey Lecture of the current series at the New York Academy of Medicine on December 15 on "Isolation and Characterization of Biologically Important Substances."

Schoenberg Lecture.—The Mark J. Schoenberg Memorial Lecture at the New York Academy of Medicine will be presented December 5 at 8:30 p. m. under the joint sponsorship of the New York Society for Clinical Ophthalmology and the National Society for the Prevention of Blindness. Dr. Jonas S. Friedenwald, Baltimore, discussed the diagnosis and treatment of glaucoma.

Miss Doe Succeeds Dr. Malloch as Librarian.—Miss Janet Doe, formerly assistant librarian of the New York Academy of Medicine Library, was appointed librarian on the recent retirement of Dr. T. Archibald Malloch. She has served as secretary of the medical library association (1936-1940), as chairman of the Committee on International and National Cooperation (1947-1948) and as the association's president (1948-1949).

Symposium on Inhalational Therapy.—The Committee on Public Health Relations of the New York Academy of Medicine, in cooperation with the New York Association of Oxygen and Ambulance Services, Inc., will present a Symposium on Inhalational Therapy, consisting of exhibits, demonstrations, motion pictures and lectures at the academy building, 2 East 103rd Street, December 5-10. Beginning at 8:30 p. m., a program of lectures dealing with a particular aspect of inhalational therapy will follow an hour's program of motion pictures pertinent to the subject. Subjects of each succeeding meeting will be: anoxia—its treatment in clinical medicine, pediatric aspects of inhalational therapy, asthma, comatose states and infantile paralysis and their treatment, treatment of cardiac disease, inhalational and aerosol therapy in pneumonia, pulmonary edema and bronchiectasis.

Further Friday Afternoon Lectures.—Continuing in 1950 the program schedule for the Friday Afternoon Lectures of the New York Academy of Medicine is as follows:

Jan. 6, J. Murray Steele, The Factor of Obesity in Body Composition.
Jan. 13, Alvan L. Barach, Aerosol Therapy in Diseases of the Respiratory Tract.
Jan. 20, Anthony C. Cipollaro, Measures to Prevent and Cure Skin Cancer.
Jan. 27, Maurice Bruger, Experimental Cholesterol Atherosclerosis.
Feb. 3, Harry Gold, Drug Therapy of Disorders of the Heart.
Feb. 10, Elise Strang L'Esperance, The L. Duncan Bulkley Lecture, Early Diagnosis of Carcinoma in Women.
Feb. 17, Janet S. Baldwin, Clinical Aspects of Congenital Heart Disease.
Feb. 24, H. Houston Merritt, Virus Infections of Nervous System.

Lectures on Metabolism.—The Mount Sinai Hospital will present a series of lectures on "Diseases of Metabolism" Wednesday evenings at 8:30 p. m. beginning December 21 in its Blumenthal Auditorium. The program is as follows:

Siegfried J. Thannhauser, Boston, Xanthomatoses.
Paul F. Hahn, Ph.D., Nashville, Tenn., New Concepts of Iron Metabolism.
DeWitt Stetten Jr., Studies of Uric Acid Metabolism.
Daniel C. Darrow, New Haven, Conn., Therapeutic Use of Potassium and Its Place in Fluid Pathology.
John P. Peters, New Haven, Conn., Sodium, Water and Edema.
Harry H. Sobotka, Ph.D., Review of Proposed Chemical Tests for Malignancy.
David Glick, Ph.D., Minneapolis, Hyaluronidase Inhibitor of Human Blood Serum in Health and Disease.
Rulon W. Rawson, Studies on Thyroid Neoplasms with Newer Tools of Investigation.

OHIO

Montgomery County Medical Centennial.—Montgomery County Medical Society at its recent hundredth anniversary celebration in Dayton presented the Ohio State Medical Association's fifty year pins and certificates to 17 members who had practiced medicine for 50 or more years or had graduated from a medical school 50 or more years ago. Dr. Elmer L. Henderson, Louisville, Ky., Chairman of the Board of Trustees and President-Elect of the American Medical Association, and Dr. Andrew C. Ivy, Chicago, vice president of the University of Illinois, were guest speakers. In connection with the anniversary the society sponsored an exhibit entitled "100 Years Progress in Medicine." Those receiving 50 year pins were Drs. Francis A. Duckwall, Benjamin W. D. Keever, James H. Farber, Charles G. Rogers, Daniel E. Miller, Edward B. Doan, Pearl L. Dunckel, Gustav A. Hochwalt, Curtiss Ginn, John L. Carter, Newell W. Cowden, Roscoe R. Bond, Charles W. Holtzmuller, Alonzo H. Dunham, J. Lillian McBride, George D. Gohn and Howard H. Herman.

VIRGINIA

Establish School of Hospital Administration.—A School of Hospital Administration has been established at the Medical College of Virginia, Richmond. Instruction will begin Jan. 2, 1950. C. P. Cardwell Jr., director of the hospital division of the college, under the general supervision of which the school will be operated, will serve as professor of hospital administration. Mr. A. J. Howell, former administrator of Raiford Memorial Hospital, Franklin, has been named associate professor and director of the school. The first six months of training will be classroom instruction with ample opportunity to observe hospital administration and operation. During the second period of 12 months the course will take the form of an internship, part of which will be obtained at the hospital division of the college and the remainder in smaller cooperating hospitals. To be admitted to the school, persons must have at least a baccalaureate degree from an educational institution approved by the Medical College of Virginia and show evidence of possessing capability and fitness for work in hospital administration. Information may be obtained from Mr. A. J. Howell, director at the Medical College of Virginia. Only eight students will be admitted each year.

WEST VIRGINIA

Special Society Elections.—The West Virginia Academy of General Practice at its first annual scientific assembly in October elected the following officers for the coming year: Drs. James L. Patterson, Logan, president; Donald R. Roberts, Elkins, vice president, and Carl B. Hall, Charleston (reelected), secretary-treasurer.——At the annual meeting of the West Virginia Tuberculosis and Health Association at Clarksburg, September 28-29, the following officers were reelected: Dr. William L. Cooke, Charleston, president; Dr. James L. Patterson, Logan, secretary, and Mr. Robert C. Hawkins, Charleston, treasurer.

Personals.—Dr. Chauncey B. Wright, Huntington, succeeds the late Russell B. Bailey of Wheeling as chairman of the board of directors of the West Virginia Cancer Society and as president of the society.——Dr. Charles A. Zeller, superintendent of Weston State Hospital, Weston, has been named as part time assistant professor of psychiatry at West Virginia University School of Medicine, Morgantown.——Dr. Robert J. Reed Jr., Wheeling, has been named a member of the state board of health to succeed the late Dr. Russell B. Bailey. Dr. Reed has been in active practice at Wheeling since 1924. He has served as president of the Ohio County Medical Society, president of the West Virginia State Medical Association and member and chairman of the council.——Dr. Chauncey B. Wright, Huntington, has been elected a director of the American Cancer Society for the unexpired term of the late Russell B. Bailey of Wheeling. Dr. Wright, who was elected president of the West Virginia Cancer Society to succeed Dr. Bailey, will represent Region 2, comprising the states of New Jersey, Pennsylvania, Delaware, Maryland, Ohio, West Virginia and the District of Columbia.

PUERTO RICO

School for Medical Technicians.—The school for medical technicians, which operates under the auspices of the School of Tropical Medicine and the Insular Health Department, during the current year has 24 students taking the course. One hundred and sixteen students—the majority of whom are women, have already completed the courses. Dr. Oscar Costa Mandry is director of the school.

LATIN AMERICA

Society News.—Officers of the Sociedade Brasileira de Cardiologia for 1949-1950 include: Drs. A. Marques, president; Luiz Capriglioni, vice president, and A. Araujo Villela, secretary general. The seventh annual congress of the society will be held July 5-10, 1950, at Cassino Hotel de Quitandinha, Petropolis, Rio de Janeiro, Brazil.

GENERAL

Surgeons Honor Dr. Finsterer.—Dr. Hans Finsterer, Vienna, was given the honor "Master of Surgery," of the International College of Surgeons at the recent meeting in Atlantic City. He is the fifth surgeon to be so honored in the 14 year history of the college. He was cited for his work in abdominal surgery with the use of local anesthesia only. Dr. Finsterer is a professor of surgery at the University of Vienna.

Air Pollution Symposium.—The American Meteorological Society will hold an air pollution symposium at its annual meeting in St. Louis, Jan. 3-6, 1950. One phase will be a panel discussion on different phases of air pollution abatement. The second phase will comprise technical papers on such subjects as urban diffusion of smoke, forecasting atmospheric dispersion conditions, dispersion from stacks and climatic influences on pollution.

Tri-State Medical Assembly Reorganized.—Dr. Charles R. Gowen of Shreveport, La., was elected president of the reactivated Tri-State Medical Assembly meeting in Texarkana, Ark., October 5. The society, which draws its membership from Arkansas, Louisiana and Texas, drew more than 100 doctors to the meeting, which was the first to be held in eight years. Dr. John W. Jones, Texarkana, was reelected secretary-treasurer. Next year's meeting will be in Shreveport, La.

Reestablish von Pirquet Gold Medal Award.—The American College of Allergists has accepted the gift of dies for the von Pirquet gold medal and will reestablish its award for outstanding contributions to clinical allergy. The first award will be made at the St. Louis meeting January 15-18. The medal was first presented at the old annual Forums on Allergy. Dr. Béla Schick, New York, and the late Dr. William W. Duke, Drs. Arthur F. Coca, Pearl River, and Robert A. Cooke, New York, have received the medal. The last medal was bestowed on the late Dr. Milton J. Rosenau. When the college initiated graduate instructional courses in allergy under the auspices of the medical school, the forums and medal award were dropped.

Papers for Hematology Congress.—The International Society of Hematology will hold its biennial congress at the University of Cambridge, Cambridge, England, Aug. 21-26, 1950. The program committee is in the process of receiving titles for papers and scientific exhibits to be presented at the congress. Material to be submitted for consideration for the program may be sent to Dr. Israel Davidson, Mount Sinai Hospital, Chicago, or Dr. S. R. Mettier, University of California, San Francisco. Those desiring to present scientific exhibits should make application as soon as possible.

Symposium on Adrenal Cortex.—The American Association for the Advancement of Science, Subsection on Medicine (Nm) will meet December 27-29 in New York. The first day's program will be a symposium on "Meeting the Needs of School Children" at the Hotel New Yorker. Beginning Wednesday morning a symposium on the adrenal cortex will be held at the Hotel Statler with Choh H. Li, Ph.D., Berkeley; Dr. Cyril N. H. Long, New Haven, Conn.; Dr. Jerome W. Conn, Ann Arbor, Mich.; Dr. Floyd R. Skelton, George Sayers, Salt Lake City; Dwight J. Ingle, Ph.D., and George W. Woolley, Ph.D., participating Wednesday. The symposium continues through Thursday evening.

National Conference on Heart Disease.—A National Conference on Cardiovascular Diseases will be held at the Mayflower Hotel, Washington, D. C., Jan. 18-20, 1950, under the joint sponsorship of the American Heart Association and the National Heart Institute of the U. S. Public Health Service. This will be the first national conference bringing together physicians, scientists, community service leaders and members of allied professions to formulate a comprehensive program to combat the nation's leading cause of death. Dr. Harold M. Marvin, New Haven, Conn., president of the American Heart Association, and Dr. Cassius J. Van Slyke, Bethesda, Md., director of the National Heart Institute, will be co-chairmen of the conference.

Van Meter Prize Award.—The American Goiter Association again offers the Van Meter Prize Award and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The award will be made at the annual meeting of the association in Houston, Texas, March 9-11, 1950, providing essays of sufficient merit are presented in competition. The competing essays may cover either clinical or research investigations; should not exceed three thousand words in length; must be presented in English; and a typewritten double spaced copy in duplicate sent to the Corresponding Secretary, Dr. George C. Shivers, 100 East St. Vrain Street, Colorado Springs, Colo., not later than Jan. 15, 1950. The winning essay will be published in the annual Proceedings of the association.

Special Society Elections.—The Association of State and Territorial Health Officers at their meeting in Washington, D. C., in October elected Dr. Wilton L. Halverson, California State Director of Public Health, San Francisco, as president, and Dr. Leroy E. Burney, Indiana State Health Association, Indianapolis, was reelected secretary-treasurer.——The Central Association of Obstetricians and Gynecologists at their meeting in Oklahoma City November 3-5 installed Dr. Lawrence M. Randall, Rochester, Minn., as president and elected the following officers: Drs. Russell J. Moe, Duluth, president-elect; John I. Brewer, Chicago, secretary-treasurer, and Harold L. Gainey, Kansas City, assistant secretary.——The Central Society for Clinical Research at its meeting November 4 chose the following officers: Drs. Wesley W. Spink, Minneapolis, president and Kenneth G. Kohlstaedt, Indianapolis, secretary-treasurer.

Appoint Dr. MacEachern Director of College of Surgeons.—Dr. Malcolm T. MacEachern of Chicago, associate director of the American College of Surgeons since 1923, has been appointed director of the college. Dr. MacEachern, chairman of the administrative board of the college since 1935, is also professor of hospital administration at Northwestern University and director of the program in hospital administration since 1943. He received his M.D. and C.M. degrees from McGill University Faculty of Medicine, Montreal, Canada. He received the Award of Merit of the American Hospital Association for outstanding contributions to hospital advancement in 1935; the Golden Key of Merit, American Congress of Physical Therapy, in 1940; the Gold Key, Tri-State Hospital Assembly, in 1948, and the Gold Key from the Association of Western Hospitals in 1949, in recognition of his founding the organization and his 21 years as honorary president.

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Annual Meeting of Anesthesiologists.—The American Society of Anesthesiology will hold its annual meeting December 7-10 at the Hotel New Yorker, New York. The subject of panel discussions include: Anesthesia Problems in Thoracic Surgery, Obstetric Amnesia, Analgesia and Anesthesia, Cyclopropane, Pain Mechanisms, Problems of Body Water in Surgery and Anesthesiology, Recent Studies on the Cerebral Circulation in Man and Surgical Treatment for Congenital Cardiovascular Disease. Guest speaker at the annual banquet December 9 at 7:30 p. m. will be Dr. Anton J. Carlson of the University of Chicago. Roundtable luncheons will be held and there will be scientific and technical exhibits.

Physiological Society Award.—Wallace O. Fenn, Ph.D., chairman of the department of physiology at the University of Rochester (N. Y.) School of Medicine and Dentistry, has been awarded the first Sharp and Dohme Award of the American Physiological Society. The society by voting membership selected him as the person who "most nearly represents the best accomplishment and promise in American physiology today." The award is to be used by Dr. Fenn to represent the society at the eighteenth International Congress of Physiology in Copenhagen, Denmark, in August 1950, where he will present a paper on "The Composition of Alveolar Air." Dr. Fenn is known for his research on the physiology of muscular contraction, metabolic processes in nervous conduction, electrolyte distributions in tissues and respiratory regulations in man.

Board of Thoracic Surgery.—In June 1949 the secretary of the Board of Thoracic Surgery met with the American Board of Surgery, and the problem of doctors who are neither members of the American Association for Thoracic Surgery or specialists certified by the American Board of Surgery was considered. The American Board of Surgery allowed a new group to be admitted to the Founders Group at the discretion of the Board of Thoracic Surgery. This group, known as group "D," consisting of other surgeons who are not members of the American Association for Thoracic Surgery or specialists certified by the American Board of Surgery and whose training, because of the period in which it was taken, does not qualify them to become certified by the American Board of Surgery, may on careful scrutiny and adequate evidence of proficiency be eligible for consideration as founder members.

New Mental Hospital Service.—A clearing house for the interchange of technical information among mental hospitals in the United States and Canada will be established by the American Psychiatric Association. The new service is made possible by a grant of $44,500 from the Commonwealth Fund for a two year period. At the outset services will be free to the mental hospitals that request them. After a trial period, however, the service will be made self sustaining through subscription fees. It will function under the direction of Dr. Daniel Blain, American Psychiatric Association medical director. A monthly mental hospital news bulletin will report news of current developments in clinical practices, hospital administration, community relations, legislation, architectural planning, accounting procedures, research and any other information which will help the hospitals improve patient treatment and care. The first issue of the bulletin will appear in January 1950.

Radiological Society Meeting.—The theme of the annual meeting of the Radiological Society of North America in Cleveland, December 4-9, will be malignant tumors. The meeting will comprise 11 major symposiums, 37 refresher courses, a tumor conference and several special sessions. Meetings will be in the Public Auditorium and are open to the medical profession. Major subjects on the five day program are:

Shields Warren, Boston, New Developments in the Cancer Field.
Fred J. Hodges, Ann Arbor, Mich., chairman, Symposium on Cancer of the Stomach.
Harold W. Jacox, New York, chairman, Symposium on Treatment of Cancer of Breast.
Robert D. Moreton, Temple, Texas, chairman, Symposium on Roentgenologic Diagnostic Procedures in Diagnosis of Tumors of the Intestines.
Laurence L. Robbins, Boston, chairman, Symposium on Intrathoracic Tumors.
Douglas Quick, New York, chairman, Symposium on Epidermoid Carcinoma of the Upper Mucous Membrane Tract.
John D. Camp, Rochester, Minn., Contrast Myelography, Past and Present.
Aubrey O. Hampton, Washington, D. C., Symposium on Bone Tumors.
Paul C. Swenson, Philadelphia, chairman, Symposium on Tumors of Urinary Tract.

Dermatology and Syphilology Meeting.—The annual meeting of the American Academy of Dermatology and Syphilology will be held in Chicago December 3-8 under the presidency of Dr. Francis E. Senear, Chicago. Special courses in histopathology and mycology will be held December 3-4 at the University of Illinois and Northwestern University medical schools. Teaching clinics will be held at the University of Illinois College of Medicine the afternoons of December 5-7. Subjects to be discussed in symposiums include: mucous membrane lesions; internal medical aspects of cutaneous disease; physiology and chemistry of the skin; industrial dermatoses; cutaneous allergy; physical and radiation therapy; psychosomatic medicine and dermatology; specific granulomas; pharmaceutical therapeutics, uncommon dermatoses and dermatoscleroses. Special lectures will be given on: "Cutaneous Manifestations of Endocrine Disorders," by Dr. Willard O. Thompson, Chicago; "Amassed Cases of Inoculation Lupus," by Dr. Sven Hellerstrom, professor of dermatology, Stockholm, Sweden; "Practical Applications of Recent Cancer Research," by Dr. Danely P. Slaughter, Chicago; "Beryllium Granulomas of the Skin," by Dr. Frank R. Dutra, Cincinnati, and "Protection from Radioactive Substances," by Duncan A. Holaday, U. S. Public Health Service, Washington, D. C.

CANADA

British Empire Wernher Memorial Fund.—An allocation of £4,000 per annum has been made for the award of traveling fellowships or grants in furtherance of the objects of the Alexander Pigott Wernher Memorial Trust Fund, which are defined as being for "the prevention and cure of blindness and deafness in the United Kingdom and British Empire, and in particular research in connection therewith by financing medical men and students within the Empire to study methods and practices in all countries of the world." These awards will be made primarily for research in ophthalmology and otology for periods up to a year, but grants may also be given for short term visits abroad to study new methods of investigation and treatment in these fields. These funds will be administered by the Medical Research Council, and applications should accordingly be addressed to the Secretary at 38 Old Queen Street, Westminster, London, S.W.1.

CORRECTION

Barbituric Coma.—The abstract "Barbituric Coma" in THE JOURNAL, Nov. 12, 1949, page 805, contains the following error: "The doses given to the baby were injections of 0.2, 0.2, 0.4 and 0.5 cc. of a 30 per cent solution." It should have been of 0.3 per cent solution.

Black Tongue.—Dr. Samuel A. Wolfson writes that in his letter to the editor in THE JOURNAL, Nov. 12, 1949, page 794, the words "resulting from streptomycin therapy" in the third and fourth lines from the bottom should have read "resulting from chloramphenicol (chloromycetin®) therapy."

Marriages

ROBERT ARTHUR RICHARDS, Baldwin, N. Y., to Miss Etta Louise Wallace of Charlottesville, Va., October 8.

B. RICHARD JACKSON, Raleigh, N. C., to Miss Marjorie Janice Fife of Shaker Heights, Ohio, October 1.

THOMAS FRANCIS XAVIER LENIHAN, New York, to Miss Catherine Joan Sclafani of Brooklyn, October 8.

ARTHUR WILLIAM FRIEND, Akron, Ohio, to Miss Marie Louise Olson at Montreal, Canada, October 24.

WILLIAM SLOAN LYLES, Columbia, S. C., to Miss Caroline Aiken McMaster of Winnsboro, October 8.

ROBERT EDWARD PONTONE, Jersey City, N. J., to Miss Dolores Barbara Topoleski of Bayonne, October 12.

HAROLD V. BEIGHLEY, Struthers, Ohio, to Miss Mary Elizabeth Herbert of Columbus, October 7.

DEAN MARLOW DOLISON, Raleigh, N. C., to Miss Nancy Claire Davis in Cleveland, October 1.

KARL KELLER VAN SLYKE, Richmond, Va., to Miss Jean Conway Bibb of Bristol, October 8.

EUGENE J. BALCANOFF, Durham, N. C., to Miss Helen C. Brown of Asheville, October 15.

HOWARD SCHNEIDER to Miss Virginia A. Kelly, both of Yonkers, N. Y., September 18.

DANIEL EASER LESTER, East Hampton, N. Y., to Miss Patricia Ann Sill of Albany, October 1.

JULIO DE POO to Mrs. Olga Splinter Renedo, both of Key West, Fla., October 9.

Deaths

Cobb Pilcher ● Nashville, Tenn.; born in Nashville Oct. 7, 1904; Vanderbilt University School of Medicine, Nashville, 1927; associate professor of surgery at his alma mater; specialist certified by the American Board of Neurological Surgery; member of the Southern Surgical Association, Society of Neurological Surgeons, American Neurological Association and the Central Neuropsychiatric Association; served as president of the Society of University Surgeons, Nashville Surgical Society, and the Harvey Cushing Society; secretary of the subcommittee on neurosurgery of the National Research Council; affiliated with the Vanderbilt University Hospital; consultant in neurologic surgery at the Veterans Administration Hospital; on the editorial board of *Archives of Surgery* and of the *Quarterly Review of Surgery*; one of the editors of "Surgery of the Nervous System"; died September 22, aged 44.

Joseph Garland Sherrill, Louisville, Ky.; born in Newton, N. C., in 1868; Louisville (Ky.) Medical College, 1888; Hospital College of Medicine, Louisville, 1895; member of the American Medical Association and its House of Delegates in 1905 and 1906; professor emeritus of surgery at the University of Louisville School of Medicine; member and in 1911 vice president of the Southern Surgical Association; fellow and a founder of the American College of Surgeons; served in France during World War I; associated with Louisville General, Jewish, and SS. Mary and Elizabeth hospitals and Norton Memorial Infirmary; consulting surgeon, Children's Free and Kosair Crippled Children's hospitals; author of "Peritonitis" and other books; died in the Veterans Administration Hospital, Lexington, September 27, aged 81, of acute myocardial failure and pulmonary edema.

Paul Allen Wheeler, Houston, Texas; born in Bonham, Texas, Sept. 7, 1903; Vanderbilt University School of Medicine, Nashville, 1932; since 1944 associate professor of pathology at Baylor University College of Medicine; consultant pathologist, Southern Pacific and Methodist hospitals; served as resident in pathology at Barnes Hospital in St. Louis, where he had been resident in pathology and assistant pathologist at City Hospital; during the period of approximately ten years which he spent in hospitals in St. Louis, he also held the positions of assistant, instructor and assistant professor in pathology at the Washington University School of Medicine; died in Rochester, Minn., October 1, aged 46, of periarteritis nodosa.

John Remer, Charlotte, N. C.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1890; specialist certified by the American Board of Radiology; fellow of the American Roentgen Ray Society, American College of Radiology, New York Roentgen Ray Society, New York Academy of Medicine and the Radiological Society of North America, of which he had been vice president; honorary member of the Canadian Radiological Society; served on the staffs of United Hospital in Port Chester, Vanderbilt Clinic, and Gouverneur, St. Clare's, Harlem and Fordham hospitals, all in New York; died September 30, aged 86, of carcinoma of the lung.

William Bache Jr., ● Wellsboro, Pa.; Jefferson Medical College of Philadelphia, 1927; secretary of the medical staff at the Soldiers and Sailors Memorial Hospital; an examiner for the Equitable Life Insurance Company of Iowa; died in the Binghamton City (N. Y.) Hospital October 24, aged 50.

Everett Leon Chapman, Detroit; University of Vermont College of Medicine, Burlington, 1910; served during World War I; affiliated with the Highland Park (Mich.) General Hospital, where he died October 3, aged 62, of cerebral hemorrhage.

Charles Alfred Davlin ● Alamosa, Colo.; Medico-Chirurgical College of Philadelphia, 1905; past president of the state board of health; mayor of Alamosa; died in Evanston (Ill.) Hospital October 22, aged 70, of injuries received in a fall.

Ralph Joseph Ford, Spencer, W. Va.; Medical College of Virginia, Richmond, 1917; member of the American Medical Association; served during World War I; clinical director and assistant superintendent of Spencer State Hospital; died October 9, aged 56, of coronary occlusion.

Charles Nelson Hyatt Sr., Albia, Iowa; Keokuk Medical College, 1895; member of the American Medical Association; past president of the Monroe County Medical Society; for many years county coroner; served as a member of the city waterworks board and county board of insanity commissioners; died September 22, aged 79, of coronary occlusion.

● Indicates "Fellow" of the American Medical Association.

Joseph F. Imperatrice, Larned, Kan.; Long Island College Hospital, Brooklyn, 1926; member of the American Medical Association; served during World War II; affiliated with the Larned State Hospital; died October 4, aged 47.

Martin U. Ivers, Christine, N. D.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1902; formerly coroner of Richland County; died in Fargo September 13, aged 81, of anemia and chronic gastritis.

Clarence Christian Jensen, Sandy, Utah; Loyola University School of Medicine, Chicago, 1919; member of the American Medical Association; for six years city councilman and for eighteen years city physician; served on the staff of Dr. W. H. Groves Latter-Day Saints Hospital in Salt Lake City; died October 7, aged 70, of congestive failure, following a cerebrovascular accident and coronary artery disease.

Isaac Grady Jones ● DeQueen, Ark.; Vanderbilt University School of Medicine, Nashville, Tenn., 1919; affiliated with the DeQueen General Hospital; health officer; for many years assistant division surgeon for the Kansas City Southern Railway; died in New Orleans September 18, aged 60.

Homer Thrall Joy ● Morristown, N. J.; Columbia University College of Physicians and Surgeons, New York, 1896; member of the Colorado State Medical Society; at one time medical examiner for the Equitable Life Assurance Society of the United States; on the honorary staff of the Morristown Memorial Hospital; died in the Doctors Hospital, New York, October 9, aged 76, of carcinoma of duodenum with postoperative complications.

Joseph Patrick Kennedy, Columbia, Pa.; Jefferson Medical College of Philadelphia, 1900; member of the American Medical Association; affiliated with the Columbia Hospital, where he died September 28, aged 81, of cerebral hemorrhage.

Julius Henderson Kevand, Syracuse, N. Y.; Syracuse University College of Medicine, 1898; member of the American Medical Association; served during World War I; died in the Mayo Clinic, Rochester, Minn., September 29, aged 72, of coronary sclerosis, myocardial infarct and duodenal ulcer.

Charles Richard Keyser, Van Wert, Ohio; Starling Medical College, Columbus, 1900; member of the American Medical Association; city and county health commissioner; died in the Queens Hospital, Kingston, Ontario, Canada, September 14, aged 74, of injuries received in a fall from a boat while vacationing in Canada.

Aimee Reynolds Killough ● Michigan City, Ind.; Chicago College of Medicine and Surgery, 1909; died in St. Anthony Hospital September 29, aged 71, of cerebral hemorrhage and arteriosclerosis.

Cyril Streator Kirkby ● Glen Ridge, N. J.; Harvard Medical School, Boston, 1926; certified by the National Board of Medical Examiners; formerly practiced in Bloomfield, where he served as school physician; on the staff of Mountainside Hospital in Montclair; died in the Essex County Isolation Hospital, Belleville, September 16, aged 49, of poliomyelitis.

Adam B. Knapp, Vincennes, Ind.; University of Tennessee Medical Department, Nashville, 1891; member of the American Medical Association; died in Belleville, Ill., September 8, aged 87, of heart disease.

Edgar Horace Knowlton ● Mantua, Ohio; University of Wooster Medical Department, Cleveland, 1902; past president of the Portage County Medical Society; served during World War I; president of the county board of health; affiliated with Robinson Memorial Hospital, Ravenna; died in Armagh, Pa., October 7, aged 75, of injuries received in an automobile accident.

John Henry Lambert ● Lowell, Mass.; Boston University School of Medicine, 1899; fellow of the American College of Surgeons; member of the American Roentgen Ray Society and the New England Roentgen Ray Society; served during World War I; formerly on the staff of Lowell General Hospital; died in North Holderness, N. H., September 10, aged 73, of coronary occlusion.

Walter Emery Lang, Norfolk, Va.; Hahnemann Medical College and Hospital of Philadelphia, 1910; member of the American Medical Association, Massachusetts Medical Society, American Psychiatric Association and the New England Society of Psychiatry; certified by the National Board of Medical Examiners; served during World War I; retired superintendent of the Westboro (Mass.) State Hospital; died in De Paul Hospital September 11, aged 67, of accidental barbital poisoning.

William August Lottman, Olive Branch, Ill.; St. Louis College of Physicians and Surgeons, 1902; died in Cairo September 2, aged 78, of organic heart disease.

Hesser Gilford McBride, East Orange, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1909; member of the American Medical Association; served on the staffs of the City, Presbyterian and St. Michael's hospitals in Newark and St. Mary's Hospital in Orange; died in Essex Mountain Sanatorium in Verona September 28, aged 64, of pulmonary tuberculosis.

Joseph H. McCullough, Waukon, Iowa; Sioux City (Ia.) College of Medicine, 1905; died September 14, aged 73, of adenocarcinoma of the colon and prostate.

Arthur Dubois Meyers ● Syracuse, N. Y.; University of Vermont College of Medicine, Burlington, 1915; instructor in anesthesiology at the Syracuse University College of Medicine; served overseas during World War I; affiliated with the Hospital of the Good Shepherd, Syracuse University; died September 9, aged 58, of coronary thrombosis.

Proctor Thayer Miller, Altoona, Pa.; College of Physicians and Surgeons, Baltimore, 1893; died September 28, aged 78, of chronic nephritis.

Henry Rufus Miner ● Falls City, Neb.; Chicago Homeopathic Medical College, 1894; served during World War I; past president of the southeast Nebraska councilor district of the Nebraska State Medical Association and the Richardson County Medical Society; fellow of the American College of Surgeons; formerly vice president of the Nebraska State Medical Association; past president of Our Lady of Perpetual Help Hospital; past president of the board of education; died in Somerville, N. J., September 30, aged 80, of coronary occlusion.

Donat Francis Monaco ● Santa Fe, N. Mex.; Loyola University School of Medicine, Chicago, 1917; served during World War I; past vice president of the New Mexico Medical Society; fellow of the American College of Surgeons and the International College of Surgeons; served on the staff of St. Mary's Hospital in Gallup; died in the Veterans Administration Hospital, Albuquerque, September 12, aged 53, of Boeck's sarcoid.

Ernst H. Mueller, St. Louis; St. Louis Medical College, 1883; served on the staff of the Alexian Brothers Hospital, where he died September 2, aged 93.

Gertrude D. Campbell O'Sullivan ● Mason, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1896; served as health officer of Port Huron, where she was secretary of the board of education; died September 14, aged 83, of arteriosclerotic heart disease.

Edward J. Panzner ● Detroit; Detroit College of Medicine, 1893; fellow of the International College of Surgeons and the American College of Surgeons; served on the staffs of the Providence, Grace and Holy Cross hospitals; in 1942 was presented with the Distinguished Citizen's Medal by the Veterans of Foreign Wars of the United States; died October 10, aged 77.

William C. Porter, Ozark, Ark.; University of Arkansas School of Medicine, Little Rock, 1908; served as president of the Franklin County Medical Society; died September 13, aged 80.

William Herbert Poynor, Harrison, Ark.; University of Arkansas School of Medicine, Little Rock, 1914; member of the American Medical Association; served as president of the state medical board; on the staff of Harrison Clinic for many years; died September 12, aged 64, of arteriosclerosis and angina pectoris.

Julia Katherine Pronty, Wheeling, W. Va.; Meharry Medical College, Nashville, Tenn., 1910; died in the Ohio Valley General Hospital September 6, aged 60, of coronary occlusion and rheumatic heart disease.

Andrew Rados ● Newark, N. J.; Magyar Kiralyi Pázmány Petrus Tudományegyetem Orvosi Fakultasa, Budapest, Hungary, 1910; specialist certified by the American Board of Ophthalmology; member of the Academy of Medicine of Northern New Jersey; affiliated with the Newark Beth Israel Hospital; died September 20, aged 61, of carcinoma of the lung.

Norris Luetscher Rainey, Wichita, Kan.; University of Kansas School of Medicine, Kansas City, 1927; member of the American Medical Association; past president of the Sedgwick County Medical Society; served during World War I; affiliated with St. Francis, Wesley, Wichita and St. Joseph's hospitals; died September 26, aged 54, of coronary disease.

George Percy Rawls ● Memphis, Tenn.; University of Tennessee College of Medicine, Memphis, 1916; served during World War I; died September 17, aged 59.

William Reese ● Dodgeville, Wis.; Illinois Medical College, Chicago, 1898; for many years health officer of Dodgeville; died September 29, aged 91.

John J. Rehorst, Fond du Lac, Wis.; Milwaukee Medical College, 1911; member of the American Medical Association; died October 1, aged 64, of coronary artery disease.

Frank Vernon Riche ● Dayton, Ohio; Ohio State University College of Homeopathic Medicine, Columbus, 1921; died September 19, aged 52.

Alfred W. Roark, Saratoga, Texas; Fort Worth School of Medicine, Medical Department of Fort Worth University, 1908; member of the American Medical Association; died in Hermann Hospital, Houston, September 12, aged 67, of pulmonary tuberculosis.

Dupe Senter Robertson, Symsonia, Ky.; University of Louisville (Ky.) Medical Department, 1897; died September 19, aged 78, of cerebral hemorrhage.

Hiram Paul Hugus Robinson, Medina, Ohio; Western Pennsylvania Medical College, Pittsburgh, 1895; member of the American Medical Association; for many years member of the village school board and county health officer; served during the Spanish-American War and World War I; died in the Medina Community Hospital September 14, aged 77, of nephritis.

Louis Max Rose, San Francisco; Chicago College of Medicine and Surgery, 1913; member of the American Medical Association; died October 15, aged 67.

John Alexander Ross ● Wauconda, Ill.; Bennett Medical College, Chicago, 1909; for many years mayor; associated with Condell Memorial Hospital in Libertyville; died October 4, aged 73, of cerebral hemorrhage.

Herbert Benjamin Royal, Harvard, Mass.; Medical School of Maine, Portland, 1887; member of the American Medical Association; served as chairman of the board of health and school physician; affiliated with the Clinton (Mass.) Hospital, Ayer (Mass.) Community Hospital and Emerson Hospital, Concord; founder of the Harvard Historical Society, of which he had been president; died September 15, aged 86, of senility.

Francis Joseph Ryan ● Syracuse, N. Y.; Syracuse University College of Medicine, 1899; member of the American Association of Industrial Physicians and Surgeons; past president of the Onondaga County Medical Society; physician to the Syracuse Transit Corporation; died October 2, aged 75, of hemiplegia and myocarditis.

John Gustav Saam ● Oakland, Calif.; Rush Medical College, Chicago, 1908; died October 3, aged 68, of coronary occlusion.

Louis Elmer Siegelstein, Cleveland; University of the City of New York Medical Department, New York, 1894; at one time county coroner; member of the Chamber of Commerce; associated with the Mount Sinai Hospital; died October 8, aged 76, of heart failure.

Anne Elliott Smiley, Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1891; associated with Woman's Hospital; died October 2, aged 79.

Herbert Meloy Smith, Columbia, S. C.; Johns Hopkins University School of Medicine, Baltimore, 1901; member of the American Medical Association; for many years director of the laboratory of the state board of health; formerly county health officer; died October 11, aged 76, of coronary thrombosis.

Marcus Gustavus Spingarn, Memphis, Tenn.; College of Physicians and Surgeons, Memphis, 1910; member of the American Urological Association; served during World War I; died October 6, aged 65.

Charles A. St. Clair, Denver; University of Colorado School of Medicine, Denver, 1915; died October 3, aged 69, of heart disease.

Alfred Henry Stephani, Chicago; Rush Medical College, Chicago, 1886; died in Swedish Covenant Hospital October 13, aged 84, of cerebral hemorrhage.

Ervin Parks Vaughan, Manchester, Tenn.; Vanderbilt University School of Medicine, Nashville, 1892; past president and secretary of the Coffee County Medical Society; for many years county health officer; three times mayor of Manchester; served as medical examiner for the selective service board during World Wars I and II; for many years chief surgeon for the Nashville, Chattanooga and St. Louis Railway; a director of the Peoples Bank and Trust Company; died September 5, aged 80, of acute nephritis and carcinoma of prostate.

Nellie Tess Warren, Camden, N. J.; Southern Homeopathic Medical College, Baltimore, 1904; died October 8, aged 69, of coronary thrombosis.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 20, 1949.

World Medical Association

The hard work of preparation for such an important congress as the General Assembly of the World Medical Association was done the previous week by ten members of the World Medical Association Council under the chairmanship of Dr. T. C. Routley, secretary of the Canadian Medical Association. The secretary-general of the World Medical Association is Dr. Louis H. Bauer of New York, who is also chairman of the Board of Trustees of the American Medical Association. His aides include a representative of nearly every continent: for Asia, Dr. S. C. Sen; for Australasia, Dr. J. G. Hunter; for Europe, Dr. Paul Cibrie, and for Latin America, Dr. J. A. Bustamante. Finances are cared for by Dr. O. Leuch of Zurich, Switzerland. The voluntary and autonomous medical associations of nearly thirty countries of the world sent representatives, but the president of the Chinese Medical Association, Dr. John Yui, was unable to attend. It was deplored by all that the medical profession of the Union of Soviet Socialist Republics and of Bulgaria, Hungary and Poland did not send delegates.

The new president of the World Medical Association for 1949-1950 is Dr. Charles Hill, secretary of the British Medical Association, who has succeeded Prof. Eugene Marquis of France. The incoming president spoke of the increasing strength of the organization and of the code of Geneva, an international code of medical ethics or a revised version of the Hippocratic Oath. This was drawn up and adopted at the second general assembly last year as the "code which we hope will bring to the same standard the medical ethics for all nations who favor the cult of liberty."

One of the earliest activities of the World Medical Association was to report on the crimes committed by German medical men during the recent war. Almost the whole medical world and the laymen of freedom-loving nations were profoundly shocked by the crimes committed by the German doctors. Such horrors are another example of the pernicious influence of bureaucratic control of medicine. The three issues of the bulletin, in English, French and Spanish, provide discussions of great interest to all practicing doctors, especially those all over the world who are witnessing increasing government control in their professional lives. The World Medical Association is a voluntary association of the various national voluntary organizations to represent and protect the interests of our professional confreres in nearly all countries of the world. It must not be confused with the World Health Organization and UNESCO, which are officered by men and women chosen by the governments represented in the United Nations. Of course, there is ample opportunity for cooperation.

Postgraduate education was carefully studied by the council, which agreed that "after the training ordinarily prescribed in a medical school course there should be an additional period of training in an approved post before engaging in an independent practice." Apparently there is a feeling that more effort should be made to increase the facilities for postgraduate study in countries foreign to the postgraduate.

A study of the social security setups existing in different countries also was proposed. As this is done the relationship between doctor and patient, the state of the medical manpower in different countries and the question of distributing medical journals and textbooks will be considered. The UNESCO has already tried to promote cooperation among national libraries. It is also trying to coordinate meetings of international medical congresses, so that there will be no overlapping of schedules. They do not decide, however, the agendas for the World Medical Association.

The first object of the Assembly is "to promote closer ties among the national medical organizations and among the doctors of the world by personal contact and all other means available." Closer ties were certainly welded at this meeting and especially at its closing function—a dinner given in the Great Hall of the British Medical Association on Friday evening. Between three and four hundred delegates and observers and their ladies were the guests at the dinner given by the Council of the British Medical Association.

The chairman of the Council of the British Medical Association, Dr. E. A. Gregg, warmly welcomed the guests and proposed the health and prosperity of the World Medical Association. He spoke in glowing terms of the affection and regard in which the new president, Dr. Charles Hill, is held in this country. Dr. Hill outlined first the matters with which the World Medical Association had been dealing in the preceding week. In addition, he said that perhaps one of the most important results achieved was the contribution to human fellowship and international relationships, that doctors from all over the world must know each other as personal friends and that these human associations and friendships were worth more than all the resolutions. The World Medical Association is now firmly established and definitely growing. A definite contribution is made to the health and peace of the world, which, after all, rests on closer human relationships. He said they were all proud to meet in the Great Hall and building of the British Medical Association in London.

Dr. Routley of the Canadian Medical Association also spoke. He emphasized the voluntary nature of the World Medical Association and all its associated bodies and stressed their freedom and independence. The World Medical Association, he said, had nothing to buy, nothing to sell, nothing to hide; there were no protocols, no inhibitions, no prohibitions. The World Medical Association had the will to and would be used to make the world a better place to live. He expressed the Association's appreciation of the arrangements made for its comfort and business by the British Medical Association and warmly welcomed the president-elect, Dr. Elmer Henderson of Louisville, Ky. Dr. Henderson received a warm welcome when he rose to reply. He also returned thanks for the arrangements made in Great Britain and emphasized that the World Medical Association was anxious to contribute to the well-being of the nations and the promotion of peace. He said that the representatives of the United States of America will do all in their power to foster the World Medical Association, which will meet next year in New York. In his opinion the difficulties which were experienced in Paris two years ago had been smoothed out and a good working organization was now established.

Dr. L. G. Tornel eloquently proposed the health of the British Medical Association. He said that the English-speaking peoples and their allies won the war because of their love of liberty. This is so inherent in their nature, he said, that they will retain it. The English, he said, take into their homes only those they like and they felt honored to be so admitted. He referred to England's two main mottos, "Honi soit qui mal y pense" and "Dieu et mon droit." Dr. Paul Cibrie of France expressed thanks for what he called overwhelming British graciousness. A response was made by the president of the British Medical Association, Dr. Curtis Bain, who spoke of the broad mindedness of the World Medical Association, shown by the fact that, although the subject of therapeutic abortion had come up and had produced sharply conflicting views, it had been quickly

settled in what used to be thought a peculiarly British way but which now appears to be an international way of medicine, that of compromise without forfeiture of principles.

Sir Lionel Whitby, who had arrived that day from an American and Canadian tour, proposed the health of the women and pointed out the contribution they could make to international peace and fraternity; this was replied to by Madame O. Leuch of Switzerland.

MADRID

(From Our Regular Correspondent)

Oct. 8, 1949.

Foundation for Patients with Heart Disease

The Fundacion Vizcaya Pro-Cardiacos of Bilbao, established in 1940 by Dr. M. Iriarte of Bilbao, covers all the fields of heart disease. The foundation was established for the care of indigent workers with heart disease. The medical care includes examination in a cardiologic dispensary of workers with heart disease and of members of their families who have heart disease. Their health is constantly supervised. The foundation is in constant medicosocial relation with national centers of puericulture, rural physicians and antituberculous and antivenereal dispensaries. The foundation reports the percentages of cardiovascular diseases in Vizcaya as follows: rheumatic diseases 38 per cent, arteriosclerosis 20 per cent, hypertension 18 per cent and syphilis 4 per cent. Foundation workers provide clinical consultation service, visit the homes of the workers and carry on economic, social and sanitary studies. The patients are classified into three groups: those able to work full time at their trade or profession, those able to work only a limited number of hours a day, either at home or the working centers, and those who cannot work. The patients are advised on the type of work they can perform and how many hours a day they can work. Children with cardiac diseases are closely watched. Their parents receive economic aid to improve the condition of the home. There are special schools and academies for children with cardiac disease and centers for advising patients as to professional reeducation and placing them in positions in which they can safely work. The largest source of money to the foundation is voluntary donations. A small source is raffles. The Caja de Ahorros Municipal de Bilbao (a department of the Municipality of Bilbao) in 1948 gave a magnificent building to the foundation. The foundation also gives patients food and instruction and makes arrangements with groceries and clothing stores to enable workers and their families to fill their needs at low cost.

The National Department of Public Health and the Sociedad Española de Cardiología are establishing medicosocial services for patients with heart disease and their families in a manner similar to that of the foundation.

Congress on Pediatrics

At the recent National Congress on Pediatrics in Sevilla more than 400 original articles were read. The official speakers were: Drs. R. Ramos Fernández, J. A. Alonso Muñoyerro and J. Cardenas Pastor, on "Streptomycin in Tuberculosis in Children"; V. Sanchis Olmo, J. Magaz Hernández-Inestrosa and C. Laguna Serrano, on "Poliomyelitis in Children," and J. Selfa Martínez, F. Sancho Martínez, M. Laffont Soto and J. R. Manzanete, on "Bacterial Enteritis in Children." Original articles were read by: Drs. L. Aldecoa Juaristi, C. Irusar Caraso and A. Rabadan Arostegui, "Infant Mortality from Infections in the First Year of Life"; A. Vallabriga and J. G. Sánchez Lucas, "Cystic Fibrosis of Pancreas in Children"; Blanco Otero, Navarro, Rodrigo Palomares, Sánchez Lopez and Sancho Martínez, "Effects of Climate and Seasons on Infant Mortality in Spain"; J. Estella, "Cardiovascular Surgery in Children"; J. D. García Ayuso, "Crenoclimatology for Infants"; E. García Ortiz, "Heart Disease in Tuberculous Children," and J. Valenzuela de Hita and L. de la Villa Rodríguez, "Social Work for Premature Infants." Drs. Garrahan, Albores, Giussani and Moran, of Argentina, presented an original article on "The Hemomyelogram in a Pediatric Clinic," Dr. Marleta on "Importance and Technic of Angiocardiography," Drs. Martínez Castro, Videla and Murtagh on "Stenosis of the Pylorus" and A. Schiavini, of Italy, on "Streptomycin in Therapy of Tuberculous Meningitis." The Portuguese delegation read the following articles: Dr. Almeida Garret on "Demography and Social Puericulture"; Drs. Castro Freire and Marques Pinto on "Streptomycin in Miliary Tuberculosis of Infants up to the Age of Two Years"; Dr. Cordeiro Ferreira on "Streptomycin on Treatment of Whooping Cough"; Dr. J. R. Almeida Garret on "Formulas for Measuring Physical Development of Children"; Drs. Salazar and Sousa on "Criteria on the Methods of Streptomycin Treatment of Tuberculous Meningitis" and Dr. Armando Tavares on "Tumors of the Kidney in Infants."

COLOMBIA

(From Our Regular Correspondent)

Oct. 30, 1949.

New Species of Trypanosoma

Drs. Santiago Rengifo-Salcedo, Hernando Groot and César Uribe Piedrahita of the Instituto de Enfermedades Tropicales Roberto Franco en Villavicencio (District of Meta) are carrying on researches on Trypanosoma infections of human beings, lower vertebrates and arthropodes. Nine different species of Trypanosoma of lower vertebrates and four species of Trypanosoma of arthropodes (Rhodnius prolixus) were studied. Two cases of Trypanosoma infection in human beings were encountered in a total of 183 blood smears prepared with the thick drop from blood of persons living in the Valle del Rio Ariari. One hundred and seventy-eight blood cultures were made of persons living in that region. Trypanosoma were found in 63 blood cultures. Morphologic studies were made and inoculation was done in different laboratory animals. The results of the inoculation showed typical Trypanosoma cruzi Chagas in one of the cases, while in the other 16 inoculated animals the Trypanosoma differed from T. cruzi. The authors provisionally named the aforementioned strains as Trypanosoma ariari. They believe that this species has not been previously identified. As a "reservoir" the authors found a South American monkey (Cebus fatuellus) which was parasitized by the same strain. Three white volunteers were inoculated with this species of Trypanosoma. They have been observed for three months. The parasite was identified in the peripheral blood of three white mice out of a lot of mice which had been inoculated. Morphologically, the Trypanosoma ariari is of about 28.57 microns; its small body is of a parabasal puntiform type, situated 2.6 to 6.0 microns from its posterior end, with a well developed undulating membrane and the nucleus situated in the anterior part of the body. Leishmanoid forms were not encountered in the tissues of the animals. The incidence of Trypanosomiasis is high in persons living in Valle del Ariari. This preliminary report was read by one of the authors at the Academia Nacional de Medicina.

New Medical Society

The Society of Internal Medicine of Colombia was recently established at Bogotá. All physicians of the city are members. The board of directors is made up of Drs. Alfonso Uribe, president; Hernando Ordóñez, vice president, and Humberto Rozzoffi, secretary. The society plans to include other cities of Colombia.

Correspondence

NEPHRITIS DUE TO SULFONAMIDE DRUGS

To the Editor: — In Current Medical Literature in THE JOURNAL, September 17, page 232, Christensen, in his article on "Nephritis Due to Sulfonamide Drugs," is reported to have said ". . . 2 patients were discharged as subsequently well, but impairment of the renal function still persisting on control after four months shows the grave damage that the kidneys are exposed to in intoxication due to sulfonamide drugs."

The reader is left with the impression that the nephritis due to sulfonamide drugs, i. e., lower nephron nephrosis, may progress to a chronic renal disorder. Once the patient has recovered from the acute episode, complete restitution of normal renal function will take place over a period of several months. Irrespective of what the underlying basis may have been for the production of lower nephron nephrosis, whether it be intravascular hemolysis, crush syndrome, thermal burns, uteroplacental damage or various poisons, the patient either dies during the acute phase of renal tubule injury or recovers completely from the renal damage. Available evidence suggests that the regeneration of the damaged tubular epithelium, though imperfect, is completed generally within three weeks after onset. Mallory (*New England J. Med.* **238**: 779, 1948) cites a case in which the patient died of homologous serum jaundice after three months, having successfully weathered a transfusion reaction in the course of which he had renal insufficiency. The kidney, so far as could be determined anatomically, was normal. In his experience the patients who survive lower nephron nephrosis reestablish normal renal function in about two to four months. In a study of the survival time in 100 fatal cases of lower nephron nephrosis, Lucke (*Mil. Surgeon* **99**: 371, 1946) found that no deaths occurred after twenty days. Burwell, Kinney and Finch (*New England J. Med.* **237**: 657, 1947) made the same observation.

The presence of renal insufficiency, in Christensen's 2 cases, more than four months after the initial renal damage casts doubt that the disease was localized to the ascending loops of Henle and the distal convoluted tubules. Sulfonamide drugs may produce renal damage in any one of four ways. They can plug up the tubules; they can produce lower nephron nephrosis; they can cause acute interstitial nephritis, involving neither the tubules nor the glomeruli, and they can produce acute necrotizing arterial lesions similar to those found in periarteritis nodosa.

One does not have to consider obstructive uropathy in his 2 cases. In acute interstitial nephritis no definite symptoms need accompany the acute stage and the urine may be normal. If this be so, there would seem to be no reason to suppose that the later stages should be productive of symptoms. This will naturally depend on the extent of the injury to glomeruli and tubules by the resulting scar formation throughout the organ.

Since the introduction of sulfonamide drugs, in 1936, there has been an increase in the number of cases of periarteritis nodosa. This disease process involves the kidneys more frequently than any other part of the body. Renal lesions are present in 80 per cent of cases, and frequently these are suggestive of acute glomerulonephritis with accompanying renal failure. Ralston, D. E., and Kvale, W. F. (*Proc. Staff Meet., Mayo Clin.* **24**: 18 [Jan. 19] 1949) in a study of 30 cases of periarteritis nodosa found that the most frequent cause of death was renal insufficiency. In 11 of their cases there were acute inflammatory lesions; in 12 there were lesions in the granulation tissue stage, and in 11 there were healed lesions. In 8 cases there was evidence of two stages in the same specimen. The vascular lesions of periarteritis were found in all sizes of arteries from the renal arteries to the arterioles and occasionally in veins. Infarction was found in 20 cases. Eight cases of glomerulonephritis were found, in all of which the vascular lesions of periarteritis were present.

In the description of his 2 cases of nephritis due to sulfonamide drugs in which chronic renal insufficiency resulted, Christensen is definitely referring to lower nephron nephrosis, because in his last case the patient had received sulfonamide drugs for some time and a blood transfusion immediately before the onset of symptoms. In this case he expressed the belief that the lower nephron nephrosis was due to the incompatible blood.

One can conclude that, if acute renal pathologic changes occur after administration of sulfonamide drugs and subsequently signs of renal insufficiency develop and persist after a period of several months, periarteritis nodosa involving the renal vasculature is present. Lower nephron nephrosis never progresses to a chronic renal lesion.

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HISTAMINE AND PERIPHERAL VASCULAR DISEASE

To the Editor:—In THE JOURNAL of September 24 there appears an article entitled "Use of Histamine in a Retarding Menstruum in Peripheral Vascular Disease." Figures 1, 2 and 3 in this article show average skin temperatures in various groups of patients followed for a period of hours after paravertebral procaine block and after the administration of histamine in the retarding menstruum.

These charts show that the temperatures of the toes in these patients, most of whom presumably had occlusive vascular disease, was 90 F. or more on the average prior to the use of the menstruum or lumbar procaine block. While occasionally this may be seen, it is most unusual to find such toe temperatures in a series of patients with peripheral vascular disease. The charts indicate that, after the lumbar novocaine blocks and after use of the menstruum, the temperatures of the toes rise to 104 or 105 F. in some instances and in others to 98 F. Over the course of many years, in recording skin temperatures in patients with various kinds of circulatory disorders, I have never seen temperatures of this magnitude following procaine block.

While I have had no experience with the use of histamine in peripheral vascular disease, I would seriously question results recorded in the figures referred to. A detailed explanation of the method of study would seem to be in order, with particular reference to the body temperature of the patients, room temperature of the environment and type of recording device used.

A copy of this note is being sent to the authors of the article as well as to Dr. George G. Dixon, who is the chief of the surgical service from which this work originated.

GEORGE P. WHITELAW, M.D.

To the Editor:—In the September 24 issue of THE JOURNAL a study of figures 1 and 2 in our article, "Use of Histamine in a Retarding Menstruum in Peripheral Vascular Disease," shows skin temperatures of the extremities to be considerably above that of blood heat. We were cognizant of this and recorded the temperatures as they appeared on the thermocouple. In as much as the comparative rises of temperature, and not the absolute values, were the points under consideration, we reported them as we read them.

S. FELDMAN, M.D.
J. LINDER, M.D.
I. J. GREENBLATT, PH.D.
Brooklyn.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS. *Part III.* Boston, Chicago and New York, January. *Parts I and II,* Feb. 13-15. Centers where there are approved medical schools and five or more candidates. Exec. Sec., Mr. E. S. Elwood, 225 S. 15th Street, Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Written.* Various locations. July 21. *Oral.* Philadelphia, April 23-27, Chicago, October 8-12. Sec., Dr. Curtiss B. Hickcox, 745 Fifth Ave., New York 22.

AMERICAN BOARD OF INTERNAL MEDICINE: *Oral.* Chicago, Feb. 8-10. Boston, April 13-15. San Francisco, June 21-23. The oral examinations in the subspecialties will be held at the same time and places. Final date for filing applications for all examinations is Jan. 1. Asst. Sec., Dr. William A. Werrell, 1 West Main Street, Madison 3, Wis.

AMERICAN BOARD OF NEUROLOGICAL SURGERY: *Oral.* Chicago, June 3. Final date for filing applications is Jan. 1. Sec., Dr. W. J. German, 789 Howard Ave., New Haven, Conn.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY, INC. *Written and Reviews of Case Histories. Part I.* Various Centers. Feb. 3. *Oral Part II.* Atlantic City, May 21-28. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OPHTHALMOLOGY: Boston, April. Sec. Dr. Edwin B. Dunphy, 56 Ivie Rd., Cape Cottage, Maine.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY. *Part II,* New York City, Feb. 9-10. Sec. Treas., Dr. Harold A. Sofield, Room 1856, 122 S. Michigan Ave., Chicago.

AMERICAN BOARD OF PEDIATRICS: *Written.* Various locations. Jan. 12. *Oral.* Richmond, Va., Feb. 10-12.; Philadelphia, March 31-April 2; San Francisco, June 23-25. Exec. Sec., Dr. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

AMERICAN BOARD OF PLASTIC SURGERY: Examinations are given in June and November of each year in the home town of applicants. Sec.-Treas., Dr. Louis T. Byars, 400 Metropolitan Bldg., St. Louis, Mo.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY: Spring Examination. Date and location of examination to be announced later. Final date for filing applications is Feb. 1. Sec., Dr. F. J. Braceland, 102-110 Second Ave. S.W., Rochester, Minnesota.

AMERICAN BOARD OF UROLOGY: *Oral and Clinical.* Chicago, Feb. 11-15. Sec., Dr. Harry Culver, 7935 Sunnyside Road, Minneapolis 21.

BOARD OF THORACIC SURGERY: *Written.* Various locations. Jan. 16. Sec., Dr. William M. Tuttle, 1151 Taylor Ave., Detroit 2, Mich.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: *Examination.* Montgomery, June 27-29. Sec., Dr. D. G. Gill, 519 Dexter Avenue, Montgomery.

ALASKA: Juneau, March 7. Sec., Dr. W. M. Whitehead, Box 140, Juneau.

COLORADO:* Denver, Jan. 3-6. Sec., Dr. George H. Gillen, 831 Republic Building, Denver.

DELAWARE: *Examination.* Dover, Jan. 10-12. *Reciprocity.* Dover, Jan. 19. Sec., Dr. J. S. McDaniel, 229 State Street, Dover.

GUAM: *Endorsement.* Agana, last Friday of each month. Sec., Capt. C. K. Youngkin, Dept. of Public Health, Guam, % F.P.O., San Francisco.

HAWAII: *Examination.* Honolulu, Jan. 9-12. Sec., Dr. I. L. Tilden, 881 S. Hotel St., Honolulu.

IDAHO: Boise, Jan. 9. Exec. Sec., Mr. Armand L. Bird, 305 Sun Building, Boise.

INDIANA: *Examination.* Indianapolis, June. Sec., Dr. Paul R. Tindall, 1138 K. of P. Bldg., Indianapolis.

KENTUCKY: Louisville, Dec. 12-14. Sec., Dr. Bruce Underwood, 630 South Third Street, Louisville 2.

MARYLAND: *Examination.* Baltimore, Dec. 13-16. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore 1. *Homeopathic. Examination.* Baltimore, Dec. 13-14. Sec., Dr. John A. Evans, 612 West 40th St., Baltimore.

MISSISSIPPI: *Reciprocity.* Jackson, December. Sec., Dr. Feliz J. Underwood, State Board of Health, Jackson 113.

MISSOURI: *Examination.* Jefferson City, Feb. 9-11. *Reciprocity,* Feb. 4. Exec. Sec., Mr. John A. Hailey, Box 14, State Capitol Building, Jefferson City.

NEW HAMPSHIRE: Concord, March 8-9. Sec., Dr. John S. Wheeler, 107 State House, Concord.

NORTH CAROLINA: *Endorsement.* Raleigh, Jan. 23. Sec., Dr. Ivan Procter, 226 Hillsboro St., Raleigh.

NORTH DAKOTA: *Examination.* Grand Forks, Jan. 4-6. *Reciprocity.* Jan. 7. Sec., Dr. C. J. Glaspel, Grafton.

OHIO: *Examination.* Columbus, Dec. 12-14. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

OKLAHOMA:* *Examination.* Oklahoma City, June 7-8. Sec., Dr. Clinton Gallaher, 813 Braniff Building, Oklahoma City.

OREGON:* *Examination.* Portland, Jan. 5-7. *Reciprocity.* Portland, Jan. 20-21. Exec. Sec., Mr. Howard I. Bobbitt, 609 Failing Building, Portland 4.

PENNSYLVANIA: *Examination.* Philadelphia or Harrisburg, January. Acting Sec., Mrs. Marguerite G. Steiner, 351 Education Building, Harrisburg.

PUERTO RICO: *Examination.* Santurce, March 7. Sec., Mr. Luis Cueto Coll, Box 3717, Santurce.

SOUTH DAKOTA:* Sioux Falls, Jan. 17. Sec., Dr. C. E. Sherwood, 300 First National Bank Building, Sioux Falls.

UTAH. *Examination.* Salt Lake City, June. Dir., Dr. Frank E. Lees, 324 State Capitol Building, Salt Lake City.

WASHINGTON:* Seattle, January. Director, Department of Licenses, Mr. Edward C. Dohm, Olympia.

WEST VIRGINIA: *Examination.* Charleston, Jan. 3-5. Sec., Medical Licensing Board, Dr. N. H. Dyer, State Capitol, Charleston.

WISCONSIN:* *Examination.* Madison, Jan. 10-12. Sec., Dr. C. A. Dawson, River Falls.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ARIZONA: *Examination.* Tucson, Dec. 20. Sec., Mr. Francis A. Roy, Science Hall, University of Arizona, Tucson.

FLORIDA: *Examination.* June 3. Sec., Mr. M. W. Emmel, University of Florida, Gainesville.

OKLAHOMA: *Examination.* Oklahoma City, April 11. Sec., Dr. Clinton Gallaher, 813 Braniff Building, Oklahoma City.

TENNESSEE: *Examination.* Memphis, Dec. 30-31. Sec., Dr. O. W. Hyman, 874 Union Avenue, Memphis 3.

WASHINGTON: Seattle, January. Sec., Department of Licenses, Mr. Edward C. Dohm, Olympia.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Naturopathy's Right to Obtain License by Reciprocity After Approval of Qualifications by State Board of Naturopathic Examiners.—The plaintiff, a naturopath, commenced an action of mandamus to compel the state department of health to grant him a certificate of registration as a person entitled to practice naturopathy in Connecticut. From a judgment in favor of plaintiff the state department of health appealed to the Supreme Court of Errors of Connecticut.

Section 4390 of the General Statutes of Connecticut provides in part that a certificate of registration shall be issued by the state department of health to any person who shall have obtained from the state board of naturopathic examiners a certificate of approval and who shall have complied with certain other statutory requirements not here in question. A 1943 amendment empowered the naturopathic board to issue such certificates of approval without examination to qualified applicants and to enter into reciprocity agreements with similar boards in other states where requirements were equal to those in Connecticut. Pursuant to this amendment the board, on Nov. 14, 1946, issued a certificate of approval to the plaintiff without examination. He then filed this certificate with the state department of health, paid the required fee and applied for a certificate of registration, which the department refused to grant him. On Jan. 10, 1947, the plaintiff instituted this suit.

Effective July 8, 1947, the legislature repealed the law relating to reciprocity thereby terminating the authority of the natur-

opathic board to issue certificates of approval without examination to practitioners from other states.

The court first pointed out that the rights acquired by the plaintiff when the board issued him a certificate on Nov. 14, 1946, are governed and determined by the law as it stood at that time. The certificate of approval when issued to the plaintiff entitled him to a certificate of registration and so conferred on him a special and valuable privilege. Continuing, the court said that the determination of whether an applicant was qualified to practice naturopathy rested with the board of naturopathic examiners, not with the department of health, and the latter has no discretion in the ordinary situation to refuse to issue a certificate of registration to an applicant found qualified by the board and to whom the board has issued a certificate of approval. The function of the department of health, with relation to the issuance of a certificate of registration when the prerequisites set forth in the statutes are complied with, concluded the Supreme Court of Errors, is ministerial, and the plaintiff is therefore entitled to receive a certificate of registration from the defendant unless the latter's refusal to issue the certificate is otherwise justified.

The defendant next contended that the certificate of approval was invalid on the ground that the reciprocity agreement with the examining board of South Carolina, where the plaintiff had secured his original license, was illegal because the requirements for licensure there were not equal to those of this state. Whether the necessary requirements were present for the purpose of a valid reciprocity agreement with the examining board of South Carolina, said the court, was within the province of the board of naturopathic examiners and is not subject to attack in this proceeding.

It was then argued that the plaintiff's certificate of approval was obtained illegally through fraud and deceit. The trial court found that this charge was not established by the evidence and the court on appeal concluded there was nothing in the record to disturb that finding.

Finally it was contended that relief by mandamus should be denied the plaintiff because relief, if granted, would be contrary to public interest. We are dealing here, said the Supreme Court of Errors, with statutes designed to safeguard and protect the public from practitioners not properly qualified to engage in the practice of a branch of the healing art and the relief sought should not be granted without due regard to the question whether the public interest would be injuriously affected. The trial court found no fact to impugn the conduct, character, professional ability or capacity of the plaintiff or from which it may reasonably be concluded that issuing the certificate of registration would be contrary to public interest.

The action of the trial court ordering the department of health to issue a certificate of registration to the plaintiff was accordingly affirmed.—*State ex rel Taylor v. Osborn Health Commissioner, 68 A. (2d) 363 (Con., 1949).*

Medical Motion Pictures

MOTION PICTURES ON NUTRITION

A bibliography of motion pictures to aid in a program in nutrition education has been compiled by Elizabeth A. Lockwood, Dr. P.H., Department of Nutrition, Harvard School of Public Health, Boston. Part I, for elementary grades, kindergarten through grade 6 (price 25 cents), is divided into four sections: Food and Nutrition; Health Education; Science, and Social Studies. Part II, for junior and senior high schools (price 50 cents), is divided into seven sections; the first four sections are titled the same as in part I, and the last three sections deal with vocational education, addresses of publishers and an index. In both parts the films are classified according to subject matter with a brief description of their contents. Copies may be purchased from the Nutrition Foundation, Inc., Chrysler Building, New York 17.

FILM REVIEWS

Technique in Routine Examination of Ocular Motility. 16 mm., black and white, silent, 1,100 feet (1 reel), showing time forty-six minutes. Produced in 1948 under the auspices of the Ophthalmological Foundation, Inc. Directed by Louis J. Girard, M.D., Coordinator of the Graduate Course in Ophthalmology, New York University College of Medicine and Marjorie V. Enos, Orthoptic Technician. Edited by and procurable on loan from Conrad Berens, M.D., Ophthalmological Foundation, 301 East Fourteenth Street, New York 3.

This motion picture presents a complete analysis of the various methods of determining abnormalities in ocular motility and encourages the development of a thorough and painstaking technic of examination. The importance of developing such a routine is emphasized in the introduction. The equipment needed is illustrated in detail. It shows rather fully the taking of a history, measurement of visual acuity with and without glasses and with a pinhole, the near point of accommodation, the cover test, parallax and screen test, the use of prisms in the objective measurement of phorias and tropias and their differentiation, the use of the Maddox rod, the determination of vergences and ductions, the near point of convergence and the use of amblyoscopes in the development of fusion. The three degrees of fusion are defined.

It shows only the orthodox and accepted methods of examination and does not present controversial material. It is therefore of considerable value as a teaching film for postgraduate students or beginning residents. The presentation is straightforward and simple, with each phase clearly and exactly shown. Particularly commendable are the close-ups illustrating various muscle anomalies. To the trained ophthalmologists, the action will appear somewhat slow and tedious, but this may have an advantage when presented to the inexperienced, for whom the film is obviously intended. In addition to beginning postgraduate students, it might be of interest to undergraduate medical students, student nurses and students of orthoptics. It is too specialized to be of interest to a general medical audience and too fundamental for presentation to ophthalmologic societies. The titles are clear and the photography is satisfactory.

Hospital Food Service Personnel Training. (TF 8-1575). 16 mm., black and white, sound, 595 feet, showing time seventeen minutes. Prepared in 1949 by and produced by the United States Army. Procurable on loan from the Army Surgeon of the Army Area in which the request originates.

This motion picture shows an audience on a tour of a hospital kitchen and provides a general picture of modern kitchen arrangement. There are scenes of the storeroom, meat-cutting area, cleaning and washing processes, pastry cook, vegetable and salad section, dietitian and chief cook. At this point it is indicated that planning is required. The dietitian and the chief cook consult, and menus are planned in advance. The cook develops his time schedule for the preparation of an individual meal. The preparation of this sample meal is illustrated and indicates that timing and scientific preparation are essential. Other important points are presented, for example, the necessity for thorough washing of vegetables to remove harmful bacteria and chemicals. It also illustrates that vegetables and salads should be served cold and should remain cold until served. Hot foods must be served hot and as soon as possible after preparation.

A series of cautions are included: Never use the contents of a bulging can; observe ragged sharp edges of opened cans; keep fingers out of the grinding machines, and check cream fillings in the summer time—they must be refrigerated.

There is brief reference to the special diet kitchen. It is emphasized that all scientifically prepared foods contribute an important part to the well-being of hospital patients and their recovery.

This informative film should be of special interest to those who have to do with the preparation and service of foods in hospitals or large institutions, including restaurants and hotels. It should be of value to hospital executives who must know the type of food service their hospital should strive to support. It should also be of interest to physicians who are concerned with the practical aspects of scientific food preparation and serving. The photography, narration and direction are excellent.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1938 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

37:1009-1206 (June) 1949

Influence of Sodium Chloride Upon Actions of Desoxycorticosterone Acetate. H. Selye, H. Stone, P. S. Timiras and C. Schaffenburg.—p. 1009.
Normal and Impaired Function of Leg Veins. J. B. Hickam, R. P. McCulloch and R. J. Reeves.—p. 1017.
Plasma Tocopherol Levels in Cardiac Patients. J. M. Lemley, R. G. Gale, R. H. Furmand and others.—p. 1029.
Potential Differences Between Multiple Central Terminals Each Connected to Separate Set of Limb Electrodes. M. J. Kert and J. M. Bryant.—p. 1035.
Clinical Studies on 21 Cases of Coarctation of Aorta. M. J. Shapiro.—p. 1045.
Clinical Study of Subacute Bacterial Infection Confined to Right Side of Heart or Pulmonary Artery. P. S. Barker.—p. 1054.
Effect of Sympathetic Stimulation on Auricular Flutter. D. Scherf.—p. 1069.
Atrial Fibrillation Induced by Epinephrine in Hypothermic Dogs. R. Grant, M. M. Gertler and K. G. Terroux.—p. 1081.
Electrocardiographic Changes on Tilting. M. Newton.—p. 1090.
Quantitative Studies of Ventilation During Inhalation of Carbon Dioxide in Normal and Emphysematous Patients. J. Holman and G. T. Shires.—p. 1101.
Intracavity and Esophageal Potentials in Right Ventricular Hypertrophy. P. Schlesinger, A. Burlamaqui Benchimol and M. R. Cotrim.—p. 1110.

American Journal of Diseases of Children, Chicago

78:1-140 (July) 1949

Accelerated Production of Poliomyelitis. J. A. Toomey, W. S. Takacs and P. P. Pirone.—p. 1.
*Tricuspid Atresia: Report of 2 Cases of Young Infants, with Successful Operation. B. M. Gasul, E. H. Fell, J. J. Marino and C. B. Davis Jr.—p. 16.
*Anoxia of Central Nervous System and Congenital Heart Disease: Report of 3 Cases with Note on History of Asphyxia. J. L. Mossberger.—p. 28.
Klebsiella Pneumoniae Associated with Infantile Diarrhea. D. N. Walcher.—p. 61.
Histoplasmin Patch Test. H. Vollmer.—p. 65.
Urinary Glycocyamine, Creatine and Creatinine: II. Their Excretion in Children with Nephrotic Syndrome. R. G. Flood and R. W. Pinelli.—p. 67.
Toxic Level of Fluorine in Water Supplies. D. C. Badger.—p. 72.
Present Treatment of Influenzal Meningitis: Review of Literature and Report on 22 Patients Treated with Streptomycin and Sulfadiazine. J. Yampolsky and J. P. Jones.—p. 97.

Successful Operation of Tricuspid Atresia.—Gasul and associates state that when Blalock and Taussig first introduced their operation for congenital malformation of the heart, they advised postponing the operation, whenever possible, until the patient is more than 2 years of age. The operation introduced by Potts, Smith and Gibson eliminated some of the objections raised by Blalock and Taussig, since neither the innominate nor the subclavian artery is used, and one is not, therefore, concerned with the caliber of these vessels. The youngest infant operated on for congenital malformation of the heart was 4 months of age. It was the opinion until now that the risks involved in this type of operation on younger infants was too great to justify its use. As a result, many desperately ill cyanotic infants, born with congenital malformations of the heart, died of anoxemia before they reached the age of 4 to 6 months. The authors successfully operated on 2 extremely cyanotic, dyspneic infants, one only 7 weeks of age, weighing 7 pounds 1 ounce (3,204 Gm.), the youngest on record, and the other 6 months of age, weighing 8 pounds 11 ounces (3,912 Gm.) for tricuspid atresia and pulmonary stenosis. They believe that surgical intervention may be indicated even in very young infants, as long as the diagnosis reveals a congenital malformation amenable to surgical treatment and the clinical course indicates that early intervention is desirable. A third, desperately ill infant 3 months of age with tricuspid atresia has recently been successfully operated on at the Cook County Children's Hospital.

Anoxia of Nervous System and Congenital Heart Disease.—Mossberger reports 3 cases in infants of uncomplicated cerebral hypoxia accompanying congenital heart disease. These infants exhibited neuronal degeneration and necrosis of various degrees of severity and extent, glial reaction ranging from disappearance to hyperplasia and vascular changes varying from dilatation to proliferation. Gross hemorrhages, softenings and cysts, often described in cases of death due to carbon monoxide and anesthetic agents, were not observed. Particular attention is drawn to the natal period and to the importance of maternal anesthesia and infantile apnea as factors which, if not judiciously controlled, may rapidly produce irreversible changes in the child's central nervous system, with consequent neurologic symptoms and impairment of mentality. The author feels that obstetricians, and perhaps pediatricians, are thinking too much in terms of comfort and rapid delivery of the mother, intracranial injuries and hemorrhages of the infant at birth and too little in terms of neonatal apnea and cerebral anoxia. This condition will leave the brain permanently damaged, while permitting the baby to live. The unwise use of analgesics in labor may subject an infant to a series of anoxic insults with cumulative and disastrous effects on the central nervous system.

American Journal of Medicine, New York

7:1-152 (July) 1949

*Clinical Manifestations of Intercapillary Glomerulosclerosis in Diabetes Mellitus. G. V. Mann, C. Gardner and H. F. Root.—p. 3.
*Experiences with the Kolff Artificial Kidney. A. P. Fishman, I. G. Kroop, H. E. Leiter and A. Hyman.—p. 13.
Transperitoneal Lavage for Twenty-Six Days in Treatment of Azotemia. G. K. Fenn, L. A. Nalefski and J. Lasser.—p. 33.
Acute Urinary Suppression: Observations in 22 Patients. R. J. Stock.—p. 45.
*Clinical and Metabolic Study of 11-Dehydro-17-Hydroxy-Corticosterone Acetate (Kendall Compound E) in Hypertension, Addison's Disease and Diabetes Mellitus. G. A. Perera, K. L. Pines, H. B. Hamilton and K. Vislocky.—p. 56.

Intercapillary Glomerulosclerosis in Diabetes Mellitus.—Mann and co-workers studied the records of all patients with urinary tract disease admitted over one year to a hospital medical service specializing in diabetes. Types of renal disease were classified. The incidence of a characteristic syndrome consisting of proteinuria, edema, hypertension and retinitis occurring in young persons with diabetes of long duration was determined. Although the prognosis in the past has been grave, hope for future improvement by better control of diabetes and its complications is well founded. A group of 43 patients exhibiting this renal complication of diabetes was studied. The authors postulate a hypothetic "typical" case, which would represent the average performance of this group. In a child aged 13 years there develops moderately severe diabetes requiring 40 to 60 units of insulin per day. Management of the disease is only fair, and diabetic coma will probably occur. Thirteen years later, at the age of 26, the first signs of renal damage appear, with an insidious and often intermittent proteinuria. After a few months this becomes constant and the amount increases to 3 to 10 Gm. per twenty-four hours. The urinary sediment reveals numerous hyaline casts and occasionally small numbers of red blood cells. These signs are followed by intermittent edema and hypertension, both mild in degree. Punctate hemorrhages are found in the eye grounds. In two years proteinuria, edema and hypertension are well established, the serum nonprotein nitrogen is now elevated, the serum albumin fraction falls and the phenolsulfonphthalein excretion becomes moderately reduced. The patient often complains of poor vision and examination reveals retinitis proliferans. Roentgen examination will generally reveal calcification of peripheral vessels. The terminal two to three years lead to progressive deterioration with persistent uremia, edema, hypoproteinemia and anemia. Death is usually caused by myocardial infarction, congestive failure or renal failure and uremia.

The Kolff Artificial Kidney.—Fishman and associates treated 6 critically ill patients with the artificial kidney. The first 4 were dying of uremia. All conservative measures had been ineffective. These patients made it possible to test the capabilities of the apparatus without incurring risk of influencing the clinical course adversely. As the functional capacity of the machine and its efficacy were established, the last 2 patients, although critically ill, were treated earlier than the others and they recovered. It is impossible to state whether spontaneous recovery would have occurred without the use of the apparatus. The experiences described leave the therapeutic effectiveness of the apparatus unsettled but clarify certain details of its usefulness and limitations.

Metabolic Effect of Cortisone.—Perera and associates say that administration of cortisone (11-dehydro-17-hydroxy-corticosterone, compound E of Kendall), has been associated with effects on protein and carbohydrate metabolism in both normal and adrenalectomized animals. A study was undertaken to determine the clinical and metabolic effects of synthetic 11-dehydro-17-hydroxy-corticosterone acetate administered to human subjects. Because of the possibility that this steroid might depress the arterial tension in addition to its apparent effects on carbohydrate metabolism, observations were made on 2 patients with uncomplicated hypertensive vascular disease, 1 with adrenal cortical hypofunction and 1 with diabetes mellitus and hypertensive vascular disease. The authors emphasize that cortisone administered in doses of 80 mg. daily, induced small to moderate retention of salt and water, slight reductions in serum sodium concentration, inconstant negative nitrogen balance, small changes in carbohydrate metabolism (and, in 2 patients, transient acetonuria) and a drop in total cholesterol, not at the expense of the free cholesterol. An increase in circulating white blood cells, due primarily to polymorphonuclear leukocytes, together with a drop in eosinophils, was recorded in 3 patients, including the 1 with hypoadrenalism. Compound E exerted a depressor effect on the resting blood pressure of the hypertensive patients and a rise in pressure in the patient with adrenal cortical hypofunction. Thus cortisone causes comparatively minor clinical and metabolic effects, so far as measured, in hypertension, diabetes and adrenal cortical hypofunction.

American Journal of Ophthalmology, Chicago

32:897-1036 (July) 1949

Diagnosis of Orbital Tumors by Angiography. A. Grino and E. Billet. —p. 897.
Surgical Treatment for Pterygium Based on New Concepts as to Its Nature. H. S. Sugar.—p. 912.
*Retrolental Fibroplasia in Prematurely Born Children. A. P. Gilger. —p. 917.
Amputation Neuroma in Orbit. F. C. Blodi.—p. 929.
Herniation of Anterior Hyaloid Membrane Following Uncomplicated Intracapsular Cataract Extraction. A. B. Reese.—p. 933.
Role of Ciliary and Superior Cervical Ganglia in Ocular Tension. E. Schmerl and B. Steinberg.—p. 947.
*Epidemiology of Epidemic Keratoconjunctivitis. P. Thygeson.—p. 951.
Accommodative Defect Following Atmospheric Concussion. H. E. Smith. —p. 959.
Vertical Nystagmus on Direct Forward Gaze with Vertical Oscillopsia. M. B. Bender and W. F. Gorman.—p. 967.
Temporal Subconjunctival Hemorrhages as Complication of Rhinoplastic Procedures. W. W. Weng and W. B. Slaughter.—p. 973.

Retrolental Fibroplasia.—Gilger made a survey of retrolental fibroplasia in 229 prematurely born children weighing less than 2,268 Gm. at birth. Retrolental fibroplasia was not observed in any children whose birth weights were above 1,814 Gm. The disease occurred in 7 of 96 infants with birth weights of 1,814 Gm. or less; its incidence thus was 7.3 per cent. The predominance of boys over girls among the infants affected with retrolental fibroplasia was statistically significant. Etiologic factors considered in retrolental fibroplasia were as follows: uterine bleeding during pregnancy, age and parity of the mother at delivery, occurrence of virus infections or chronic illness during pregnancy, cause of premature onset of labor, race, associated intracranial disease, administration of vitamin A in early postnatal life and other factors in early postnatal management and course. The difference in the influence of these factors in affected and nonaffected premature infants was not sufficient to be statistically significant. The development of retrolental fibroplasia in this series cannot be attributed to them. Three cases followed from birth until the development of retrolental fibroplasia are described. During the first two weeks of life nothing was observed that varied from what is usual in the normal newborn premature infant. None of the 3 infants had a hyaloid artery or posterior tunica vasculosa lentis or their remnants present after the first two weeks of life, thus excluding the suggested role of these fetal vessels as structures producing the development of retrolental fibroplasia. In 1 case, the first indication of any abnormality was the development of considerable tortuosity of the retinal vessels. Elevation and detachment of the retina occurred preceding the development of a retrolental membrane. This seems to indicate that the retina is involved in the formation of the membrane primarily rather than secondarily, which was the earlier conception. The existence of an underlying retinitis or choroiditis was suggested by varying degrees of vitreous cloudiness in all 3 cases.

Epidemic Keratoconjunctivitis.—According to Thygeson, epidemic keratoconjunctivitis first appeared in the United States in epidemic form in 1941-1942. It became epidemic once more in 1947-1948. The disease should be differentiated from acute herpetic keratoconjunctivitis, nummular keratitis, acute follicular conjunctivitis and acute trachoma. It bears no relationship to superficial punctate keratitis, an entity which has been widespread in this country. The high communicability of the disease appears to be due to the ability of the virus to survive drying and dilution. It differs in this respect from other potentially epidemic types of keratoconjunctivitis, such as gonorrheal ophthalmia and trachoma. In the author's 90 cases, about equally divided between the two epidemics, the disease was characterized by an acute onset with preauricular adenopathy, by the nonpurulent character of the exudate and by the development in most cases of small, round, subepithelial corneal opacities after an interval of seven to ten days. Transmission of the disease occurred by the following means: contaminated tonometers, contaminated solutions including tetracaine (pontocaine®), cocaine-epinephrine and homatropine, direct finger-to-eye transmission and fomites. No satisfactory evidence was obtained to indicate the presence of asymptomatic conjunctival carriers or respiratory carriers. In view of the high frequency of office transmissions, routine office practice should be reexamined in order to prevent this and other infections. The following prophylactic measures are recommended: (1) the discarding of all dropper bottles, (2) the use of individual sterilizable droppers, (3) adequate hand washing before and after treatments, (4) use of disposable treatment chair arm covers and (5) individual masks and goggles for workers in industry, with early recognition and isolation of cases.

American Journal of Orthopsychiatry, New York

19:381-570 (July) 1949

Psychological Problems of Children with Organic Brain Disease. L. Bender. —p. 404.
Indications for Residential Treatment of Children with Severe Neuropsychiatric Problems. C. Bradley.—p. 427.
Psychiatry, Psychology and Seizures. W. G. Lennox.—p. 432.
Objective Evaluation of Psychotherapy. A. F. Bronner and others. —p. 463.
Social Structure of Hospital as Factor in Total Therapy. G. Devereux. —p. 492.
Psychiatric Implications of Failing Student. E. Liss.—p. 501.
Role of Nursery School in Child Guidance Clinic. E. N. Rexford.—p. 517.

American Journal of Physiology, Baltimore

157:343-482 (June) 1949. **Partial Index**

Measurements of Heart Output by Electrokymography. G. C. Ring, M. Balaban and M. J. Oppenheimer.—p. 343.
Excretion of Solutes and Osmotic Work of "Resting" Kidney of Hydropenic Man. S. Rapoport, W. A. Brudsky and C. D. West.—p. 357.
Creatinuria from Guanidoacetic Acid Ingestion and Its Relation to Site of Action of Methyltestosterone. E. A. H. Sims.—p. 404.
Effect of Blood Glucose Level on Secretion of Adrenal Cortex. G. L. Steeples Jr and H. Jensen.—p. 418.
Man's Respiratory Response During and After Acclimatization to High Altitude. H. Rahn and A. B. Otis.—p. 445.
Inhibition of Brain Dehydrogenases by "Anticholinesterases." M. Michaelis, N. I. Arango and R. W. Gerard.—p. 463.
Descending Respiratory Pathways in Cervical Spinal Cord. H. Rosenbaum and B. Renshaw.—p. 468.

American Journal of Psychiatry, New York

106:1-80 (July) 1949

Psychophysiologic Study of Mentally Ill Patients: Part I—Status of Peripheral Autonomic Nervous System as Determined by Reaction to Epinephrine and Mecholyl. D. H. Funkenstein, M. Greenblatt and H. C. Solomon.—p. 16.
Twin Studies on Senescence. F. J. Kallmann and G. Sander.—p. 29.
Evaluation of Psychiatric Screening Test: Cornell Work Form-I. G. Saslow and F. O. Shobe.—p. 37.
Group Therapy Project with Parents of Behavior Problem Children in Public Schools. A. D. Buchmueller and M. C.-L. Gildea.—p. 46.
Affective Learning and Student-Teacher Relationship. S. R. Warson. —p. 53.
Problem of Teaching Psychologic Attitudes to Medical Students. E. A. Steele.—p. 59.
Graded Lobotomy. M. C. Petersen and J. G. Love.—p. 65.
Psychiatric Opportunities in a Small Community. R. O. Jones.—p. 69.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

61:743-904 (June) 1949

Possibilities and Limitations of Roentgen Diagnosis. L. G. Rigler. —p. 743.
Roentgen Findings in Intracranial Mass Lesions. J. G. Teplick and P. Dorsey.—p. 762.
*Complete Block of Lumbar Spinal Canal Due to Herniation of Nucleus Pulposus. B. S. Epstein.—p. 775.
Roentgenologic Diagnosis of Prolapsed Gastric Mucosa. C. Hawley, P. D. Meyer and B. Felson.—p. 784.
Arachnodactyly (Marfan's Syndrome): 2 Case Reports with Etiological Implications. R. C. Moehlig.—p. 797.
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*Subacute (Pseudotuberculous, Giant Cell) Thyroiditis and Its Treatment. J. D. Osmond Jr. and U. V. Portmann.—p. 826.
Sarcoma of Uterus: Report of 9 Cases. S. B. Reich.—p. 830.
Studies on Metabolism of Radioisotopes by Various Fungi and Bacteria: Distribution of Organisms Containing Radioiodine (I^{130}) in Animal Body. L. A. Pearson, J. M. Hammer, K. E. Corrigan and H. S. Hayden.—p. 839.

Complete Block of Lumbar Spinal Canal.—Epstein reports 5 patients, 4 men between the ages of 29 and 59 and 1 woman aged 33, with midline extrusion of the nucleous pulposus in the lower lumbar spine with complete block of the spinal canal. The myelographic appearance associated with this condition, when ethyliodophenylundecylate (pantopaque*) is instilled above the level of the lesion, is a more or less transverse block with irregular dentate serrations at the caudal end of the column. When the contrast medium is introduced beneath the level of the block, the lower margin of the herniated disk is demonstrable as a somewhat more irregular transverse defect and the dentate serrations are less pronounced. This appearance is due to pressure of the herniated disk against the roots of the cauda equina. Clinically, 4 of the 5 patients showed minimal neurologic changes and the fifth presented a syndrome diagnosed as tumor of the cauda equina. These observations are in contrast to cases in the literature, which presented a similar myelographic pattern with the contrast medium injected above the block but were commonly associated with a severer neurologic syndrome often indistinguishable from compression of the cauda equina due to tumor. The operative approach is best made transdurally in cases of midline extrusion of the nucleus pulposus. All the patients made an uneventful recovery.

Subacute Thyroiditis.—Osmond and Portmann report 143 patients with all types of thyroiditis, admitted to the Cleveland Clinic during the period 1936 to 1947. Ninety-three of these, 83 women and 10 men, the majority between the ages of 25 and 52, presented the subacute form which sometimes is called pseudotuberculous or giant cell thyroiditis. Suppuration does not occur in subacute thyroiditis, and no organisms have been demonstrated in the tissues. The pathologic manifestations of subacute thyroiditis are fibrosis of variable degree, chiefly in the connective tissue partitions, but also intralobular; foci of small follicles with reduced colloid; infiltration with lymphocytes, polymorphonuclear leukocytes and plasma cells, foreign body giant cells and focal accumulations of histiocytes. The principal complaints were pain in the neck and throat, radiating to one or both ears. In addition there was lassitude, increased fatigability, nervousness, loss of weight, anorexia and dysphagia. The onset of subacute thyroiditis was usually sudden. A low grade fever was usually present. The basal metabolic rate ranged from minus 17 per cent to plus 30 per cent, the average being plus 10 per cent. The clinical picture is one of a toxic reaction to an inflammatory process in the thyroid. The natural course of the disease inclines toward spontaneous recovery without permanent damage to the thyroid. The extremes of duration were from two days to one year. Surgical operations are unnecessary. Roentgen therapy is indicated and was practiced in 55 patients. A skin dose of 100 to 150 r was administered every other day for four to six treatments. Most patients were relieved of pain and tenderness after two or three treatments, the severity of other symptoms was reduced and the course of the disease shortened. Recurrence of symptoms in mild form developed in 7 patients and was relieved in 6 by a second course of roentgen therapy. There were no deleterious effects from treatment.

American Journal of Surgery, New York

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Vagotomy and Anatomic Variations in Vagus Nerve. A. K. Boyd.—p. 4.
Treatment of Acute Peritonitis with Aureomycin. L. T. Wright, W. I. Metzger, E. B. Shapero and others.—p. 15.
*Injection into Intercostal Nerves for Relief of Postoperative Pain. F. M. Graham, T. H. Seldon and J. T. Priestley.—p. 23.
Skeletal Pinning and External Fixation. H. E. Mock Jr.—p. 29.
Arthrodesis of Ankle Joint. H. B. Hiestand.—p. 36.
Cryptomenorrhea: Congenital and Acquired. T. L. Ball and R. G. Douglas.—p. 40.
Technic of Presacral Neurectomy. G. Cotte.—p. 50.
Recent Experiences with Corkscrew Bolt in Fractures of Hip. R. K. Lippmann.—p. 54.
Brachial Plexus Block Anesthesia. J. J. Bonica, D. C. Moore and M. Orlov.—p. 65.
Injection of Mandibular Nerve and Gasserian Ganglion: Anatomic Study. K. S. Chouke.—p. 80.
Clinical Manifestations of Sympathetic Reflex Arc. A. Kolodny.—p. 86.
Factors Which Influence Mortality in Duodenal and Gastric Surgery. D. E. Ross.—p. 90.
Gastrojejunocolic Fistula. A. M. Vaughan, L. C. Hollister and F. A. Lagorio Jr.—p. 99.
*Fallacy of So-Called Thyroid Capsule. P. Thorek.—p. 133.

Injection Into Intercostal Nerves for Postoperative Pain.—Graham and co-workers used a cocaine derivative in oil to relieve postoperative pain, but it did not seem to be effective for a sufficient period. A commercial solution of ammonium sulfate was then considered. The solution is composed of benzyl alcohol 0.75 per cent, ammonium sulfate 0.75 per cent and sodium chloride 0.48 per cent in sterile water. It is nontoxic, is effective over a prolonged period and has a selective action on pain-conducting mechanism. The solution was used in 30 operative cases to produce intercostal block anesthesia; a control group of 20 received intercostal injections of sterile isotonic solution of sodium chloride. An average of 4.5 hypodermic injections of a narcotic was required for each patient in the group treated with the ammonium sulfate solution and an average of 5.2 injections for each patient in the control group. The incidence of urinary dysfunction and other complications was approximately the same for both groups. The incidence of pulmonary complications was relatively high (4 cases of atelectasis, or 13 per cent) among those who received injections of the commercial solution. There were no pulmonary complications in the control series. Intercostal injection of the compound does not allay postoperative pain to a significant degree, but a few patients experienced only minimal pain in the region of the incision. Approximately 60 per cent of patients experienced a sufficient analgesic effect from the ammonium sulfate injection to be recognized clinically when compared with a control group. Intercostal injection of the commercial solution leaves much to be desired from the point of view of ideal remedy for relief of postoperative pain.

Fallacy of So-Called Thyroid Capsule.—Thorek shows that a well defined capsule completely encircling the thyroid gland is a fallacious concept. The idea that the gland can be readily enucleated as soon as this capsule or sheath is entered is incorrect. Two distinct cleavage planes exist which are identified as prethyroid and post-thyroid spaces. The prethyroid space or plane is entered as soon as the fascia which lines the posterior surface of the sternothyroid muscle and the areolar tissue which forms the thyroid sheath is incised. The latter two usually are intimately related. The post-thyroid space is a

triangular interval which is entered when the middle thyroid vein is severed and the lateral attachment of the pretracheal fascia to the lateral border of the thyroid lobe is incised. A thorough understanding of the deep cervical fascia and its arrangement in three layers enables one to utilize true fascial planes in thyroid surgery rather than causing one to attempt to demonstrate and enter a complete encircling capsule or sheath which does not exist. Illustrations clarify the author's anatomic description of the thyroid region.

American Journal of Tropical Medicine, Baltimore

29:269-434 (May) 1949. **Partial Index**

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Occurrence of Endamoeba Polecki, Prowazek 1912, in Macaca Mulatta and in Man. J. F. Kessel and H. G. Johnston.—p. 311.
Effect of Certain Arsenicals on Natural Infections of Endamoeba Histolytica and Endamoeba Polecki in Macaca Mulatta. J. F. Kessel and F. Kaplan.—p. 319.
Chemotherapy of Experimental Endamoeba Histolytica Infection in Dogs. P. E. Thompson and B. L. Lilligren.—p. 323.
Endemic Fulminating Amebic Dysentery. R. Elsdon-Dew.—p. 337.
Pamaquine Poisoning in Man, with Clinicopathologic Study of 1 Case. A. C. Löken and W. Haymaker.—p. 341.
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Trypanosoma Equiperdum, Trypanosoma Brucei and Trypanosoma Hippicum Infections in Laboratory Animals. M. N. Hood.—p. 369.
Susceptibility of African Wild Animals to Yellow Fever. K. C. Smithburn and A. J. Haddow.—p. 389.
Phthalylsulfacetimide (Thalamyd) in Cholera. H. Seneca and E. Henderson.—p. 425.

Annals of Internal Medicine, Lancaster, Pa.

30:1087-1340 (June) 1949

Natural Occurrence of Antithyroid Compounds as Cause of Simple Goiter. E. B. Astwood.—p. 1087.
Clinical Angiocardiography: Critical Analysis of Indications and Findings. C. T. Dotter and I. Steinberg.—p. 1104.
Poliomyelitis: Early Diagnosis and Early Management of Acute Cases. J. R. Paul.—p. 1126.
Diagnosis and Management of Atypical or Virus Pneumonia. J. H. Dingle, R. F. Williams and J. P. Craig.—p. 1134.
Syncope: Review. R. D. Williams.—p. 1143.
Association of Capillary Sclerosis with Arteriosclerosis and Phlebosclerosis; Its Pathogenesis and Clinical Significance. E. Moschcowitz.—p. 1156.
Comparative Studies on Iodine Absorption of Annyodin, Chiniofon, Diodoquin and Vioform in Man. A. A. Knight and J. Miller.—p. 1180.
Therapeutic Possibilities of Para-Aminobenzoic Acid. C. J. D. Zarafonetis.—p. 1188.
*Gonococcal Arthritis: Study of 202 Patients Treated with Penicillin, Sulfonamides or Fever Therapy. J. A. Robinson, H. L. Hirsh, W. W. Zeller and H. F. Dowling.—p. 1212.
*Observations on Primary Coccidioidomycosis. A. B. Taylor and A. K. Briney.—p. 1224.

Gonococcic Arthritis.—Robinson and co-workers treated 202 patients, 109 males between the ages of 20 and 40 and 93 females between the ages of 10 and 30, with gonococcic arthritis by various methods. Monarticular involvement occurred in only 39 patients, while 163 had polyarthritis. Treatment with the Kettering hypertherm resulted in recovery in 21 of 33 patients. Better results were obtained in patients treated during the acute stage. Typhoid vaccine was used intravenously in 22 patients. The results are not conclusive because in no case could the therapy be considered adequate. Sulfonamide drugs were used in 140 patients with favorable results in 97 (69.3 per cent). The duration of the disease did not have as great an effect on the outcome as did the existence of previous episodes of arthritis. Only 43.1 per cent of the patients with previous attacks responded favorably, whereas 81.2 per cent without previous episodes did well. Although the authors' results show relatively good response to sulfonamide drugs, there appeared to be a definite tendency toward a progressive decrease in the efficacy of these drugs during the past few years. Penicillin was given to 32 patients, of whom 23 (72 per cent) recovered. As with sulfonamide drugs, the previous episodes of arthritis had a greater bearing on the outcome than did the duration of the present symptoms. Penicillin is the drug of choice in the treatment of gonococcic arthritis. The recommended dose is 2 to 5 million units administered over a period of five to ten days. Since sulfonamide drugs are the simplest to administer, they may be tried first. They should always be employed in patients who do not respond to penicillin. Fever therapy is probably the most efficacious form of therapy in patients with a history of previous attacks of arthritis, but because of the dangers involved it should be the last resort after penicillin and sulfonamide drugs have failed to bring about recovery.

Primary Coccidioidomycosis.—Taylor and Briney report 43 patients, 39 men and 4 women between the ages of 18 and 35 years, with primary coccidioidomycosis, seen at a station hospital in Arizona during 1946 and 1947. The average length of time any patient had been in the endemic area was six and one-half months. Exposure to dust previously contaminated with spores from infested rodents had been noted in 37 patients; no particular exposure was determined in 15, moderate chronic exposure in 7, severe chronic exposure in 6 and a heavy exposure definitely recalled by the patient as having occurred within three weeks of the onset of illness in 9. The most impressive fact was the relative well-being and comfort of the patient once he had been in the hospital for one or two days, even despite greatly elevated sedimentation rates, extensive pulmonary infiltration and rise of temperature. The Negro patients exhibited severer symptoms than the white and had a longer convalescent period. More reliance has been placed on dysphagia than is warranted for any one symptom as a diagnostic point, but any patient in an endemic area with predominantly respiratory complaints associated with substernal pain on swallowing should be suspected of having coccidioidomycosis and should be properly investigated. Roentgen examination of the chest revealed pneumonia-like infiltrations in 35 patients, hilar thickening in 28, hilar and mediastinal adenopathy in 19, nodular parenchymal lesions in 6, cavitation in 2 and pleural effusion in 3. The average length of hospitalization was twenty-one days. Treatment consisted of bed rest and symptomatic therapy such as salicylates and cough mixtures. The disease was of relative mildness and early symptomatic recovery of the patients ensued. The significance of positive Kahn tests in 2 patients, previously negative, and in 1 patient previously treated for latent syphilis but with subsequent negative reports is questionable and deserves further investigation.

Annals of Surgery, Philadelphia

130:1-144 (July) 1949

Cervical Esophagogastric Anastomosis Following Subtotal Resection of Esophagus for Carcinoma. R. H. Wylie and E. L. Frazell.—p. 1.
One-Stage Resection of Carcinoma of Cervical Esophagus with Subpharyngeal Esophagogastrostomy: Report of Successful Case. L. A. Brewer III.—p. 9.
Cervical Esophagogastrostomy Following Resection of Supra-Aortic Carcinoma of Esophagus. R. Nissen.—p. 21.
*Surgical Treatment of Duodenal Ulcer—Comparison of Results With and Without Vagotomy. G. Crile Jr., T. E. Jones and J. B. Davis.—p. 31.
"Categorically Inoperable" Carcinoma of Breast. W. L. Tomlinson and C. T. Eckert.—p. 38.
Exteriorization of Canine Vesical Trigone for Experiments on Kidney. N. S. R. Maluf.—p. 43.
Factors Inducing Renal Shut-Down from Lysed Erythrocytes: Experimental Study. N. S. R. Maluf.—p. 49.
Effects of Ultraviolet Radiation on Exposed Brain—Experimental Study. G. L. Odom, H. M. Uratz and F. V. Kristoff.—p. 68.
Disarticulation of Innominate Bone (Hemipelvectomy) for Primary and Metastatic Cancer. I. M. Ariel and F. W. Hark.—p. 76.
*Talc Granuloma—Survey of Its Incidence and Significance. W. B. Ross and J. M. Lubitz.—p. 100.
Complications of Gastro-Intestinal Intubation. J. S. Chaffee.—p. 113.
Inadvertent Gastro-Ileostomy. W. H. Moretz.—p. 124.

Duodenal Ulcer: Results With and Without Vagotomy.—Crile and his co-workers report the results of surgical treatment of 174 patients with intractable duodenal ulcer. The first half of the series had gastric resections or gastroenterostomies and the second half had vagotomies with pyloroplasty or gastroenterostomies. Both series are similar in respect to age, duration of symptoms, preoperative complications and severity of the disease. The same two surgeons performed the operation in both groups. Vagotomy with gastroenterostomy or pyloroplasty has the following advantages over gastric resection or gastroenterostomy: a lower mortality rate and a lower incidence of demonstrable recurrent ulceration, recurrent gastrointestinal hemorrhage, recurrent ulcer pain and abdominal pain

of all types. Disadvantages of vagotomy with gastroenterostomy or pyloroplasty include a possible greater incidence of transitory postoperative vomiting and a probable greater incidence of transitory postoperative diarrhea. Although the results following gastric resection are superior to those following gastroenterostomy, even the selected patients whose stomachs were resected had a significantly higher mortality and morbidity after operation than did those subjected to vagotomy coupled with gastroenterostomy or pyloroplasty. The side effects of vagotomy have been few and mild. The authors conclude that vagotomy in the first eighteen months after operation, in conjunction with gastroenterostomy or pyloroplasty, has given better results than gastric resection or gastroenterostomy alone.

Talc Granuloma: Incidence and Significance.—Ross and Lubitz say that it was not until they observed a death at their hospital from intestinal obstruction and fecal fistula directly attributable to talc that they became fully aware of the seriousness of the practice of using talcum powder in the operating room. They reviewed 1,912 consecutive surgical specimens submitted to the pathologic laboratory at their hospital. A total of 33 specimens containing talc granuloma were found. Draining sinuses following chest surgery were found to be frequently complicated by talc granuloma. In specimens from 9 of the 12 chest cases examined, talc was considered to be a major factor in the production and persistence of these sinuses. To the reported cases of talc granuloma are added 1 case of bronchopleural fistula, 1 of failure of function of a cholecystoduodenostomy, and of nonunion of a fracture of the radius. Talc reaction was noted in 8 of 21 cases of recurrent pilonidal sinuses. Since in each case residuals of the sinus tract could be demonstrated, recurrence of the sinus could not be primarily attributed to talc. However, the talc may act as an irritant necessitating revision. Healing resulted in 21 of 29 cases in which the talc granuloma had been excised. The authors emphasize the inadvisability of the use of talc as a dusting powder.

Archives of Internal Medicine, Chicago

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Medical Arena in the Toronto of Osler's Early Days in Study of Medicine. N. B. Gwyn.—p. 2.
Osler's Original Autopsy Books. H. E. MacDermot.—p. 7.
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William Osler in Philadelphia, 1884-1889. F. R. Packard.—p. 18.
The Jocular Side of Osler. G. Blumer.—p. 34.
Dr. Osler's Renal Stones. T. B. Futcher.—p. 40.
The Gay of Heart. T. S. Cullen.—p. 41.
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Osler at Oxford. A. S. MacNalty.—p. 135.
A Day with Dr. Osler in Oxford. W. L. Bierring.—p. 143.
William Osler, the Humanist. J. F. Fulton.—p. 149.
Pathogenesis of Renal Lesions in Bright's Disease. A. W. M. Ellis.—p. 159.
Posthumous Tributes to Sir William Osler. E. Rosencrantz.—p. 170.

Archives of Neurology and Psychiatry, Chicago

60:549-636 (Dec.) 1948

Occupational Pressure Neuritis of Deep Palmar Branch of Ulnar Nerve. J. L. Bakke and H. G. Wolff.—p. 549.
*Asymbolia for Pain. J. L. Rubins and E. D. Friedman.—p. 554.
*Neurologic Sequelae of Rocky Mountain Spotted Fever. M. H. Thomas and L. Berlin.—p. 574.
"Inverted Marcus Gunn Phenomenon" (So-Called Marin Amat Syndrome). R. Wartenberg.—p. 584.
External Ocular Muscle Palsies Occurring in Diabetes Mellitus. E. A. Weinstein and H. Dolger.—p. 597.
Glioblastoma of Occipital Lobe Simulating Psychosis with Cerebral Arteriosclerosis in Octogenarian. H. N. Naumann.—p. 604.
Massive Hemorrhage in Brain Tumors. S. W. Gross and M. B. Bender.—p. 612.

Asymbolia for Pain.—Rubins and Friedman define asymbolia for pain as the inability to recognize the unpleasant or disagreeable component of a painful or threatening stimulus, with the result that little or no defense reaction is produced although the noxious stimulus itself is perceived. They cite 4 patients with this syndrome, whom they studied over a prolonged period. These patients all had lesions of the areas in and around the supramarginal gyrus of the dominant hemisphere proved either at operative intervention or by diagnostic procedures. The predominant symptom consisted of lack of withdrawal to painful stimuli. This symptom has been differentiated from distorted reaction to pain seen in those with analgesia due to destructive lesions of the pathways of the neuraxis and in those with congenital insensitivity to pain. Understanding of the significance of the noxious effect of pain was retained, as evidenced by appropriate reaction to verbal menaces. Routine neurologic examination showed a normal sensory status. Pinprick was recognized as sharp, light touch was perceived, and hot and cold were correctly distinguished. Stereognosis and discrimination of texture or quality were impaired. The extinction phenomenon for tactile and visual stimuli was present. These patients had mild degrees of perceptive aphasia and severer amnesic aphasia. In addition, all showed a symptom complex which had been considered a deficiency manifestation of lesions of the parieto-occipital region. This included disturbance of body schema as evidenced by right-left disorientation and inability to reproduce postural attitudes in space; Gerstmann's syndrome, or the combination of agraphia, acalculia and finger agnosia, and constructional or idiokinetic apraxia. The constancy of this symptom complex occurring along with asymbolia for pain and the absence of one or several symptoms of the group in other patients described in the literature as having similarly placed lesions suggests that the symptoms are not merely the expression of loss of function of a center which lies in that relatively small area. This grouping of symptoms expresses a new pattern of behavior subsequent to a functional reorganization of activity of the entire brain, necessitated by impairment of the integrative role of the parieto-occipital region.

Neurologic Sequelae of Rocky Mountain Spotted Fever.—During the acute stage of Rocky Mountain spotted fever the central nervous system is frequently involved, but it is generally believed that although neurologic changes may persist for weeks or months after the onset of the illness, they are usually transient and ultimately subside without leaving clinically detectable residuals. There is evidence that following some cases there may remain permanent neurologic sequelae. The authors cite the case of a man aged 48, in whom an acute course of Rocky Mountain spotted fever was followed by pronounced mental deterioration and a spastic paraplegia which persisted for nineteen months. Pathologic study of the brain revealed numerous old thrombonecrotic lesions and microinfarcts. There were widespread demyelination and an intense proliferation of glia in all parts of the white matter. The posterior and lateral columns of the spinal cord were similarly affected. Reviewing reports on neurologic sequelae of Rocky Mountain spotted fever, the authors say that the neurologic defects which persist beyond the acute phase of the disease may be divided into two categories: those that subside completely in less than one year and the permanent residuals. Five cases have been reported in which neurologic abnormalities were observed for two months to one year following the acute illness. Only 2 cases have been reported with known sequelae exceeding one year. The first was that of a boy 8 years of age who manifested during his illness a left hemiparesis which persisted for four weeks and subsequently caused some difficulty in walking. Two and one-half months after the onset seizures developed which were confined to the left side of the face. The epileptiform attacks later became generalized and ran a progressive course with a fatal outcome three years after the onset. After a period of stupor and mental confusion a 20 year old soldier began to manifest euphoria, hallucinations, incoherence and unreliability, which were still present more than one year after the onset. The neurologic sequelae of Rocky Mountain spotted fever fall into five categories: mental changes with diffuse cerebral involvement; convulsive disorder; hemiplegia; paraplegia, and cranial and peripheral nerve involvement.

Archives of Otolaryngology, Chicago

50:1-114 (July) 1949

Blast Injuries to Ear: Texas City Disaster. G. S. McReynolds, F. R. Guilford and G. R. Chase.—p. 1.
Anatomy of Bronchial Tree. J. H. Neil and W. Gilmour.—p. 9.
Effect on Ear of Vitamin A Feeding After Severe Depletion. H. B. Perlman.—p. 20.
Suspension Mechanism of Upper Lip and Columella. B. L. Griesman. —p. 36.
Functional and Anatomic Relation of Sphenopalatine Ganglion to Autonomic Nervous System. D. Higbee.—p. 45.
Postgraduate Training in Otolaryngology. F. L. Lederer and J. G. Schoolman.—p. 59.
Chorda Tympani Nerve Section and Tympanic Plexectomy: New Technic Used in Cases of Deafness, Tinnitus and Vertigo. S. Rosen.—p. 81.
Rehabilitation of Larynx in Cases of Bilateral Abductor Paralysis: Open Approach to Arytenoidectomy, with Report of Past Four Years' Experience. De G. Woodman.—p. 91.
Chronic Progressive Deafness, Including Otosclerosis and Diseases of Inner Ear: Review of Literature for 1946. A. L. Juers, E. L. Derlacki and G. E. Shambaugh Jr.—p. 97.

Archives of Surgery, Chicago

59:1-184 (July) 1949

*Congenital Cystic Disease of Lung in Infants and in Children. M. M. Ravitch and J. B. Hardy.—p. 1.
*Bleeding Peptic Ulcer. E. F. Lewison.—p. 37.
Effect of Application of Several Antibacterial Substances on Healing of Wounds. J. L. Ponka and C. R. Lam.—p. 57.
Costoclavicular Compression: Relation to Scalenus Anticus and Cervical Rib Syndromes. J. M. McGowan and M. Velinsky.—p. 62.
Experimental Studies in Vascular Repair: II. Strength of Arteries Repaired by End to End Suture, with Some Notes on Growth of Anastomosis in Young Animals. R. I. Lowenberg and H. B. Shumacker Jr.—p. 74.
Retrocaval Ureter. R. Lich Jr. and O. Grant.—p. 84.
*Acute Mesenteric Lymphadenitis. R. W. Postlethwait and F. H. Campbell.—p. 92.
Severe Interference with Bile Flow in Primary Hepatitis: Its Significance in Differential Diagnosis of Jaundice. F. Steigmann, K. A. Myer and H. Popper.—p. 101.
Submucous Lipomas of Colon. R. R. Bigelow and A. J. Aalyan.—p. 114.
Preservation of Anal Sphincter in Surgical Procedures in Rectosigmoid Region. C. S. White.—p. 129.
Bleeding Control and Absorption of Synthetic Adhesives: Second Report. M. L. Lowry.—p. 147.
Multiple Primary Tumors with Fibrosarcoma and Coexisting Carcinoma of Lung. L. A. Hochberg, D. Grayzel, S. L. Berson and S. Rosenberg.—p. 166.
Intra-Arterial Administration of Penicillin with Special Reference to Bone Marrow Concentration: Experimental Study. L. Blum and S. S. Schneierson.—p. 176.

Congenital Cystic Disease of Lung in Children.—Ravitch and Hardy report 12 patients with cystic disease of the lungs. The ages of the patients ranged from 13 weeks to 13 years. Some infection was found in each case. Eleven of the 12 patients were successfully treated by surgical removal of the involved area of lung (6 single lobectomies, 4 lobectomies of two adjacent lobes and 1 pneumonectomy). The single death, from pneumonia, occurred in an infant aged 8 months for whom operative treatment had been deferred and was not performed. Two patients had cysts associated with anomalous lobes of the lung, in each instance a trilobed left lung; 1 of these had an anomalous arterial blood supply derived from the aorta. A third patient had an anomalous systemic artery entering a cystic lower lobe of the right lung. Resection of the cyst or of the cyst-bearing segment of lung is the recommended treatment.

Bleeding Peptic Ulcer.—Lewison's study of bleeding peptic ulcer is based on a statistical analysis of patients with gross hemorrhage from an ulcer who were admitted to the Johns Hopkins Hospital between 1928 and the first part of 1946. There were 2,400 patients with duodenal, gastric or marginal ulcer, and 218 had active hemorrhage from ulcers. Thus, about 9 per cent of patients with ulcer had gross hemorrhage. The ratio of males to females was 5.2 to 1. Of the 16 patients who died, 15 were males. Hemorrhage from ulcer is more likely to be serious or fatal among patients past 50. In 150 patients under the age of 50 the mortality rate was only 5.3 per cent, whereas in 68 patients above the age of 50 the mortality rate was more than doubled—11.8 per cent. There were 8 fatalities among comparatively young patients (in their thirties). The selection of patients whose hemorrhage is likely to prove fatal if not surgically checked, as contrasted with those whose hemorrhage is likely to cease spontaneously, remains primarily a problem of clinical judgment. The value of a prompt and frequent feeding program (a modified Meulengracht regimen) combined with antacids and transfusions resulted in no deaths in 76 cases. A minimum of 5 to 10 per cent of patients treated by medical methods will die. Surgical treatment of hemorrhage due to ulcer at the Johns Hopkins Hospital consisted for the most part of conservative management during the phase of active bleeding. Partial gastric resection was the operation of choice in 56 patients of a total of 82 receiving surgical treatment. Early operation in the midst of hemorrhage was infrequently performed. Late operation, usually carried out when bleeding had ceased or at least decreased, was performed in over 80 per cent of the cases. Seven patients were subjected to vagotomy in addition to some ancillary operative procedure on the stomach, and after six months none of these had a recurrent hemorrhage due to ulcer.

Acute Mesenteric Lymphadenitis.—Between 1941 and 1946 there were admitted to Duke Hospital 1,604 patients with the symptoms and signs of an acute condition in the abdomen which led to treatment by appendectomy. Of these, 931 had acute appendicitis. The remaining 673 patients had grossly normal appendixes. In 268 of these 673 patients, enlargement of mesenteric lymph nodes was encountered, and the diagnosis was nonspecific mesenteric lymphadenitis. Thus 1 patient in every 6 admitted because of an acute condition within the abdomen and treated by appendectomy had mesenteric lymphadenitis. Nonspecific mesenteric lymphadenitis is a complex characterized by abdominal pain and tenderness. Many of the patients have a history of prior attacks of pain, and about half have an infection of the upper part of the respiratory tract. The pain usually begins in the right lower quadrant of the abdomen, the epigastrium or the periumbilical region, and when it does not begin in the right lower quadrant it localizes there in 66 per cent of the patients. Pain frequently comes in paroxysms, with intervals of complete relief. Tenderness is usually present in the right lower quadrant, but signs of peritoneal irritation occur in only about one third of the cases. The temperature and the white blood cell count may or may not be increased. Of 154 patients followed, 17.5 per cent had recurrence of the same pain. Operation, with removal of the appendix, is strongly advised by Postlethwait and Campbell, as an accurate differential diagnosis between mesenteric lymphadenitis and acute appendicitis cannot be made.

Blood, New York

4:793-890 (July) 1949

Clinical Association of Macrocytic Anemia with Intestinal Stricture and Anastomosis. D. G. Cameron, G. M. Watson and L. J. Witts.—p. 793.
Experimental Production of Macrocytic Anemia by Operations on Intestinal Tract. D. G. Cameron, G. M. Watson and L. J. Witts.—p. 803.
Blood Counts of the Adult Albino Rat. D. G. Cameron and G. M. Watson.—p. 816.
*Observations on Effect of Animal Protein Factor Concentrate on Persons with the Macrocytic Anemia of Pernicious Anemia, of Nutritional Macrocytic Anemia and of Sprue, and on Persons with Nutritional Glossitis. T. D. Spies, G. Garcia Lopez, F. Milanes and others. —p. 819.
*Pernicious Anemia and Related Anemias Treated with Vitamin B_{12}. E. Jones, W. J. Darby and J. R. Totter.—p. 827.
Comparison of Vitamin B_{12} from Liver and from Streptomyces Griseus in Treatment of Pernicious Anemia. L. A. Erf and B. Wimer.—p. 845.
Effect of Various Anticoagulants on Specific Gravity of Blood and of Plasma, and on Hematocrit. P. L. McLain and C. H. W. Ruhe. —p. 863.
The Kell-Cellano (K-k) Genetic System of Human Blood Factors. P. Levine, M. Wigod, A. M. Backer and R. Ponder.—p. 869.

Effects of Animal Protein Factor Concentrate.—Spies and co-workers treated 15 patients, 5 with pernicious anemia in relapse, 4 with nutritional macrocytic anemia in relapse, 3 with tropical sprue in relapse and 3 with nutritional glossitis unassociated with anemia, with animal protein factor concentrate. Intramuscular injections of animal protein factor concentrate were given in amounts ranging from a total of 5 cc. in a period of twenty-three days to 5 cc. daily for fourteen days. The injections were followed by a positive hematologic response in each case. The parenteral administration of this material to the 3 patients with nutritional glossitis was followed by the disappearance of the redness and soreness of the tongue.

Anemias Treated with Vitamin B_{12}.—Jones and co-workers treated 11 patients, 8 with pernicious anemia in relapse, 1 with sprue, 1 with nutritional macrocytic anemia and 1 with anemia secondary to the absorptive defect of intestinal lipodystrophy, with crystalline vitamin B_{12} for periods up to six months. Vitamin B_{12} possesses hemopoietic activity in those anemias which are characterized by megaloblastic arrest. The 8 patients with pernicious anemia in relapse responded hematologically. Consideration of the quantities of the crystalline vitamin required to promote maximal erythropoiesis in pernicious anemia indicates that less than about 0.75 microgram daily in doses at intervals of several days will not suffice to establish and maintain blood values as high as does adequate treatment with liver extract. Parenteral daily doses of 1 microgram of vitamin B_{12} promoted good erythropoiesis in 1 patient, although it appears that the maximum rate of hemopoiesis may require an initial average daily dose of approximately 3 micrograms. The reticulocyte count is an unreliable quantitative criterion of activity or adequacy of treatment. Two patients with mild neurologic involvement were relieved by treatment with B_{12} alone. The response of the single patient with nutritional macrocytic anemia was equally as good to vitamin B_{12} as to liver extract. The patient with sprue received over a period of twenty-seven weeks large quantities of B_{12} but did not attain as high an erythrocyte count as he had previously reached when receiving liver extract or folic acid. Hemopoietic factors in addition to pteroylglutamic acid and vitamin B_{12} may be required by some patients to obtain maximal erythrocyte levels. Vitamin B_{12} as well as pteroylglutamic acid effected a reduction in the fecal urobilinogen output of the patients with pernicious anemia. No change in urinary excretion of pteroylglutamic acid or of porphyrin was detected in patients treated with vitamin B_{12}.

Bulletin of Johns Hopkins Hospital, Baltimore

85:1-114 (July) 1949

Sir William Osler and Bacterial Endocarditis. W. T. Longcope.—p. 1.
Clinical Course of Disseminated Lupus Erythematosus: Evaluation of Osler's Contributions. P. A. Tumulty and A. McG. Harvey.—p. 47.
Osler's Chronic Cyanotic Polycythemia with Splenomegaly. M. M. Wintrobe.—p. 75.
Consideration of Banti Syndrome. P. F. Wagley.—p. 87.

Bulletin of the Los Angeles Neurological Society

14:53-118 (June) 1949. Partial Index

Analysis of Electroencephalographic Findings in 40 Cases of Verified Brain Tumor: Electroencephalographic Findings in Malignant Cerebral Gliomas. H. M. Cuneo, C. W. Rand and H. Sjaardema.—p. 86.
Anterior Sacral Meningocele: Survey of Literature and Report of Case. D. Eder.—p. 104.
Cerebral Complications Following Injection of Tetanus Antitoxin: Report of Case. E. D. Fisher.—p. 113.

Canadian Medical Association Journal, Montreal

61:1-98 (July) 1949

*Primary Biliary Cirrhosis. J. A. Dauphinee and J. C. Sinclair.—p. 1.
*New View on Use of Dicumarol in Pregnant Patient. D. L. Adamson, R. T. Weaver and C. H. Jaimet.—p. 6.
Anticoagulant Therapy. C. H. Jainet.—p. 10.
Amoebiasis in Veterans. R. C. Dickson and Marion Ross.—p. 13.
Use of BCG. A. Frappier and R. Guy.—p. 18.
Unanswered Questions in Clinical Allergy. K. D. Figley.—p. 24.
Pregnancy in Thyrotoxicosis Under Treatment with Thiouracil. W. C. Acton and J. D. Cottrell.—p. 27.
Organization of Combined Dermatological-Radiotherapeutic Centre in Canadian Army Overseas. J. Sommers and N. M. Wrong.—p. 30.
Industrial Injuries of Shoulder Joint. D. L. C. Bingham.—p. 32.
Aspects of Perennial Allergic Rhinitis and Asthma in Childhood. H. E. Edwards.—p. 36.
Subacromial Bursitis: Classification and Evaluation of Results of Roentgen Therapy. A. C. McCurrach, G. I. Norton and J. Bouchard.—p. 39.
Modified Denis Browne Operation for Hypospadias. H. O. Foucar.—p. 45.
Survey of 16 Cases of Malignant Melanoma of Uveal Tract. S. Ramsey and J. Conroy.—p. 47.
Subaortic Stenosis in Adult. J. Greenberg and M. A. Simon.—p. 50.
Multiple Precordial Leads. C. G. Campbell.—p. 54.

Primary Biliary Cirrhosis.—According to Dauphinee and Sinclair the term biliary cirrhosis indicates that the cause of the cirrhosis is an inflammatory reaction in or about the fine intrahepatic biliary ducts rather than a disease of the parenchymal cells of the liver. Such a reaction in this situation is likely to interfere with the free passage of bile through these tiny canaliculi and to cause the laying down of excessive amounts of fibrous tissue in and about the biliary ducts in the portal spaces of the liver. It is these changes which produce both the clinical and anatomic features of biliary cirrhosis. Such a reaction in the small ducts may be secondary to inflammation or obstruction of the large extrahepatic biliary channels or it may be due to primary disease of these finer bile passages themselves. The authors discuss the group in which the extrahepatic biliary channels are patent and unobstructed and the mechanical obstruction, if it exists at all, is present in the smallest interlobular branches of the biliary tree. This is generally a diffuse process which involves the whole intrahepatic biliary tract. It leads to enlargement of the liver and spleen and to persistent jaundice. Because of these observations the resulting clinical condition is often called hypertrophic biliary cirrhosis with chronic jaundice. The authors prefer to call it primary biliary cirrhosis. Although in the later stages the parenchymal cells of the liver may become severely damaged they are relatively unharmed in the early stages. The obstruction is intrahepatic and not extrahepatic, and no beneficial result can be expected from surgical intervention. No treatment is known which influences favorably the disease. Periods of apparently spontaneous improvement may alternate with periods of more rapid progression. Low cholesterol diets have been advocated for patients in whom the serum cholesterol level is high. Decreases in serum cholesterol levels have been observed in some instances even though the cholesterol content of the diet was not restricted. The authors have employed a regimen similar to that used in the treatment of other forms of cirrhosis, which includes rest, a high carbohydrate, high protein diet, and administration of large amounts of vitamin B complex, but they have not observed any striking or sustained benefit.

Dicumarol® in Pregnancy.—Adamson and associates report a preliminary study on anticoagulant therapy administered to pregnant women with a history and/or evidence of venous disease. Although embolic phenomena account for a small percentage of maternal fatalities, there are patients who during their pregnancy have a chronically swollen, uncomfortable or even painful leg due to phlebitis. The authors aimed to develop an anticoagulant treatment whereby these morbid conditions might be prevented. The majority of cases of postpartum thrombophlebitis probably occur from the third to the seventh day following delivery. It is believed that if dicumarol® is indicated as a prophylactic in the puerperium, the earlier it is given following the delivery, the safer. Fifteen patients were delivered to whom dicumarol® was given at the onset of labor, or who had received adequate amounts of the drug at time of delivery. The authors found that this agent, properly administered, can be safely used ante partum, during labor or post partum. There is no increase in immediate or delayed bleeding from the pregnant uterus due to the use of dicumarol.® The drug will probably decrease the incidence of pulmonary emboli in pregnant women with venous disease. The authors hope that the proper use of this agent will decrease the number of women with painful, swollen legs arising from venous complications of pregnancy.

Cancer Research, Chicago

9:321-384 (June) 1949. Partial Index

Serum Proteins in Cancer. C. Huggins.—p. 321.
Mammary Tumor Milk Agent Given to Adult Female Mice Following Splenectomy and Vital Staining. P. R. F. Borges.—p. 328.
Hypervolemia and Associated Changes in Mice Bearing a Transplanted Granulosa Cell Tumor. E. E. Clifton and J. T. Wolstenholme.—p. 331.
Adenocarcinoma in Uterus of Endocrine Imbalance in Female Rat. C. A. Pfeiffer.—p. 347.
Amino Acids in Epidermal Carcinogenesis in Mice. E. Roberts, A. L. Caldwell, G. H. A. Clowes and others.—p. 350.
Effect of Dietary Fat and Carbohydrate on Diethylstilbestrol-Induced Mammary Cancer in Rats. W. F. Dunning, M. R. Curtis and M. E. Maun.—p. 354.
Beta-Glucuronidase Activity in Human Female Genital Cancer. L. D. Odell and J. C. Burt.—p. 362.
Preparation of Radioactive Iodotetrazolium Salt and Its Distribution in Mice. A. M. Seligman, R. Gofstein and A. M. Rutenburg.—p. 366.
Spontaneous Basophilic Tumors of Pituitary Glands in Gonadectomized Mice. M. M. Dickie and G. W. Woolley.—p. 372.

Delaware State Medical Journal, Wilmington

[illegible] (June) 1949

[illegible]

[illegible] (July) 1949

[illegible]

Fatality Associated with Amphetamine Ingestion.—[illegible] The authors describe a method for the quantitative detection of amphetamine sulfate and related compounds in tissues. They review 5 previously reported cases in which ingestion of amphetamine was followed by death. The authors gained the impression that the role of the drug as the sole causative factor of death must be questioned. In all 6 cases there were modifying extraneous factors. In the case here reported there was a long history of alcoholic overindulgence.

Roentgen Therapy of Subdeltoid Bursitis.—Lattman and Kunkel review 235 cases of subdeltoid bursitis which were treated by roentgen therapy during the last five years. Best results were obtained in the acute cases of subdeltoid bursitis, either first attacks or acute exacerbations of a chronic condition. The sooner the therapy was instituted, the quicker was the response. Good comparable results were obtained using a lower voltage with only one portal, and smaller daily dosage of roentgen units with lower total dosage of roentgen units than have been reported previously. From the results obtained in this series of cases, the authors conclude that low voltage roentgen therapy of subdeltoid bursitis is just as effective as high voltage therapy, whether the bursitis is acute, subacute or chronic.

Florida Medical Association Journal, Jacksonville

36:1-42 (July) 1949

What May be Expected of Radiation Treatment of Nonmalignant Diseases. T. H. Lipscomb.—p. 19.
Modified Antibiotic Therapy. J. A. Meuse Jr.—p. 22.
Brief Stimulus Convulsive Therapy. W. C. Miles.—p. 25.
Coccygodynia: Report of 100 Cases. C. C. Mentzer.—p. 27.
*Problems of Surgical Amebiasis with Respect to Acute Appendicitis. A. H. Lisenby.—p. 30.
Preanesthetic Medication and Choice of Anesthetic Agent. H. Carron.—p. 32.

Amebiasis and Appendicitis.—Lisenby stresses that every physician may encounter amebiasis caused by Endameba histolytica, since this type of parasitic invasion occurs in 10 per cent of the general population. The authors have encountered 24 cases with a history of one or several of the following symptoms: indigestion, gas, a feeling of fulness, recurring pain, nausea or general abdominal discomfort. Few patients gave a history of diarrhea. Some were treated for nervous indigestion, but when these patients with vague abdominal symptoms were subjected to stool examination, many were found to have amebiasis. A man aged 28 complained of acute pain of eighteen hours' duration in the lower right quadrant of the abdomen. A physician made a diagnosis of appendicitis. [illegible] Surgery is possible, but with few exceptions abdominal or rectal operations are contraindicated in intestinal amebiasis. [illegible] the three-stage operation offers less morbidity and mortality.

Iowa State Medical Society Journal, Des Moines

[illegible] (July) 1949

[illegible]

[illegible] (Aug.) 1949

[illegible]

Journal of Bone and Joint Surgery, Boston

31A:459-692 (July) 1949. Partial Index

Specialization in Medicine: What is Orthopedic Surgery? R. K. Ghormley.—p. 459.
*Control of Bone Growth by Epiphyseal Stapling: Preliminary Report. W. P. Blount and G. R. Clarke.—p. 464.
Prediction of Unequal Growth of Lower Extremities in Anterior Poliomyelitis. A. J. Stinchfield, J. A. Reidy and J. S. Barr.—p. 478.
Conservative Treatment of Functional Disorders of Feet in Adolescent and Adult. R. P. Schwartz and A. L. Heath.—p. 501.
Tibial Torsion. C. C. Hutter Jr. and W. Scott.—p. 511.
Mechanism of Structural Changes in Scoliosis. A. R. Arkin.—p. 519.
Pathology of Neural-Arch Defects: Dissection Study. [illegible]—p. 529.
Nutrient Arteries of Vertebral Bodies. T. A. Willis.—p. 538.
Changes in Elastic Adipose Tissue. J. G. Kuhns.—p. 541.
Etiology of Trochanteric Fractures of Femur. G. N. Spears and J. T. Owen.—p. 548.
Short First Metatarsal: Its Incidence and Clinical Significance. R. I. Harris and T. Beath.—p. 553.
Acute Traumatic Posterior Dislocation of Intervertebral Disc with Paralysis. R. C. Schneider.—p. 566.
Congenital Posterior Angulation of Tibia. C. H. Heyman and C. H. Herndon.—p. 571.
Evolution of Metaphyseal Fibrous Defects. I. V. Ponseti and B. Friedman.—p. 582.
External Skeletal Fixation in Treatment of Fractures of Tibia. J. R. [illegible]—p. 586.
*Disc Syndrome: Results of Conservative Care of Patients with Positive Myelograms. P. C. Colonna and E. B. Friedenberg.—p. 614.
*Osteochondromatosis. R. D. Mussey Jr. and M. S. Henderson.—p. 619.
Vitallium-Cup Arthroplasty of Hip Joint: End-Result Study. F. E. Stinchfield and R. E. Carroll.—p. 628.

Control of Bone Growth by Epiphyseal Stapling.—Blount and Clarke say that when Phemister reported the operative arrest of longitudinal growth of bone in 1932, a new principle was introduced in the correction of excessive length and angular deformity of extremities. Another advance was made when Haas proposed the retardation of bone growth by a wire loop. Stimulated by the work of Haas, the authors began in 1944 to employ rigid staples of the type popularized by Burns. They have found that if one staple is inserted on each side of the end of a long bone so as to bridge the epiphysis medially and laterally, the staples will bend and break. If two staples are used, they will bend and occasionally break. In this

manner the growth is only temporarily or inadequately retarded. If three staples are inserted on each side of an epiphysis, growth will be stopped immediately and almost completely. The authors describe and illustrate the technic of insertion and also the removal of the staples. They stress the following points: 1. Efficient stapling of the distal femoral and proximal tibial epiphyses stops the elongation of bone at these epiphyses. 2. The operation is less extensive and the risk of complication is less than with other methods. 3. Angular deformity may be corrected during the growth period. Knock knee, bow leg, back knee, flexion deformity or combinations of these deformities are rapidly overcome. 4. The occasional complicating irregularities of growth following stapling should be corrected by rearrangement of the staples. 5. After removal of the staples, growth at the epiphysis is resumed at about the same rate as would be expected. Various questions are being further investigated, such as what is the ideal size and design of staples and for what length of time is it safe to leave staples in place?

Disk Syndrome: Results of Conservative Care.—Colonna and Friedenberg say that the role of the herniated disk in the picture of backache and radicular pain is controversial and that widely divergent views exist regarding operative indications, the extent of the operation and the question whether or not spine fusion should follow disk removal. At the Hospital of the University of Pennsylvania almost all the cases of lower back pain and radicular pain are treated for a period by conservative therapy, consisting of bed rest on a firm support, traction, adequate sedation, daily physical therapy and, when the patient is ambulatory, some form of back support. If the patient fails to respond to these measures within a few weeks, a myelogram is indicated. In each of the 28 patients studied by the authors a clinical diagnosis of protruded nucleus pulposus was advanced. Each patient was also given an oil myelogram. A protruding mass in the lumbar canal was noted under the fluoroscope and was confirmed by anteroposterior, oblique and lateral views of the oil column. The 28 patients in this study were followed from one to eight years after myelography and were treated with braces, restricted activity and physical therapy. Thirteen patients improved with bed rest and traction. In 4, surgical treatment was withheld because this was the initial attack. In 7 others, the surgeon believed that the pain at the time of examination was insufficient to warrant operative measures. Four patients refused surgical intervention. The results in this series are viewed in relation to material from a prior study in which 95 patients were examined one to five years after removal of the lumbar intervertebral disk. In the nonoperative group 8 patients (29 per cent) were in the pain-free category; in the operative group, 57 patients (60 per cent). Twenty (71 per cent) of the 28 patients in the nonoperative group had residual pain; only 38 (40 per cent) were in this category in the operative group. Thus the results in this conservatively treated group compare unfavorably with the results obtained in a carefully selected operative series.

Osteochondromatosis.—Mussey and Henderson define osteochondromatosis as a condition in which cartilaginous and osteocartilaginous bodies are formed within and by the synovial membranes of joints and, occasionally, of bursae and tendon sheaths. Synonyms include chondromatosis, synovial chondromas, joint chondromas and diffuse enchondroma of the joint capsule. The authors reviewed the clinical records of patients who had undergone operation at the Mayo Clinic for loose bodies in the joints or adjacent bursae. One hundred and four patients were included in this study. The etiologic basis of osteochondromatosis cannot be stated definitely. This study does not support the hypothesis of infection. The importance of trauma as a stimulus is debatable. Repeated slight traumas to a joint which transmits a great deal of force and which is relatively unprotected seem important. The distribution of affected joints tends to support this conclusion, for 70 per cent were knees and 22 per cent were elbows. In more than two thirds of the cases the right elbow was involved. The authors believe that all accessible loose or pedunculated bodies should be removed surgically, because of the discomfort and the danger of secondary osteoarthritis. If the process in a knee joint appears active in the synovial membrane at the time of operation, synovectomy should be done. Unsatisfactory postoperative results are usually due to osteoarthritic changes in joint-surface contours. Spontaneous disappearance of loose bodies may occur. Observations of normal conditions on microscopic examination of the synovial membrane do not necessarily negate a diagnosis of osteochondromatosis, for the process may have completed its cycle and the membrane may have resumed its normal appearance.

Journal of Immunology, Baltimore

63:1-134 (May) 1949

Influenza Vaccination: Comparison of Antibody Response Obtained by Various Methods of Administration. H. B. Bruyn, G. Meiklejohn and H. D. Brainerd.—p. 1.
Immunogenetic Studies of Drosophila Melanogaster. I. Development of Technics and Detection of Strain Differences. A. S. Fox.—p. 13.
Experimental Rubella in Human Volunteers. S. G. Anderson.—p. 29.
Precipitin-Tests in Plasmodium Lophurae Malaria. J. C. Torrey and M. C. Kahn.—p. 41.
Chloromycetin in Experimental Rickettsial Infections. J. E. Smadel, E. B. Jackson and A. B. Cruise.—p. 49.
Mechanism of Detergent Effect on Egg-White Inhibition of Hemagglutination by Formolized Swine Influenza Virus. F. Lanni and J. W. Beard.—p. 67.
Differences in Hemagglutinating and Antigenic Properties of Strains of Influenza Virus Isolated from One Outbreak. M. M. Sigel.—p. 81.
Quantitative Study of Passive Anaphylaxis in Guinea Pig: IV. Passive Sensitization with Non-Precipitable or "Univalent" Rabbit Antiovalbumin. E. A. Kabat and B. Benacerraf.—p. 97.
Release of Histamine and Heparin by Antigen from Isolated Perfused Liver of Sensitized Dog. A. E. Scroggie and L. B. Jaques.—p. 103.
Effect of 42 Day Course of Treatment on Sensitivity of Tubercle Bacillus to Streptomycin. W. E. Swift Jr. and F. A. Beardsley Jr.—p. 117.
Therapy of Experimental Brucella Infection in Developing Chick Embryo. IV. Therapy with Aureomycin. R. Magoffin, D. Anderson and W. W. Spink.—p. 125.

J. Neuropathology & Exper. Neurology, Baltimore

8:255-354 (July) 1949

Pick's Disease. M. A. Neumann.—p. 255.
*Central Nervous System in Hepatic Disease. A. B. Baker.—p. 283.
Pathologic Changes in Central Nervous System Resulting from Experimentally Produced Hyperpyrexia. N. B. Dobin, C. A. Neymann and S. L. Osborne.—p. 295.
Encephalo-Trigeminal Angiomatosis (Sturge-Weber's Disease): Case Report. J. M. Craig.—p. 305.
*Nodular Dermatomyositis: Pathologic Study. G. B. Hassin and L. Kaplan.—p. 319.
Angiomatous Malformation of the Brain: Case of Congenital Arterio-Venous Angioma Racemosum. N. Raskin.—p. 326.
Hepato-Lenticular Degeneration: Case Associated with Postero-Lateral Column Degeneration. A. D. Leigh and W. I. Card.—p. 338.
Early Plasma Cell Formation in Acute Herpetic Encephalitis. B. Campbell.—p. 347.

Central Nervous System in Hepatic Disease.—Baker studied 18 cases of acute, subacute and chronic disease of the liver. Numerous sections were taken in all cases from all areas of the nervous system and prepared with special stains. In 8 cases these sections showed extensive changes. The alterations involved both gray and white matter and consisted of nerve cell damage and widespread areas of demyelination. The tissue alterations were predominantly perivascular in nature, suggesting a toxic etiologic basis. From a review of the literature and the study of these cases it is believed that the hepatic damage enables some endogenous toxin to reach the brain and produce the widespread damage.

Nodular Dermatomyositis.—Hassin and Kaplan report 1 case of nodular dermatomyositis in a girl aged 17 with periodic attacks of muscular discomfort ("pulling") combined with swelling of the ankle joints and some muscles. There was weakness in the extremities. The patient did not present any evidence of involvement of the central or peripheral nervous system. Examination of the excised fragments of muscle tissue disclosed a large inflammatory focus in the endomysium combined with noninflammatory nodules in the muscles, blood vessels and skin. There were mild degenerative changes in the muscles represented by proliferation of sarcolemmal and muscle fiber nuclei, and myofibrillary disruption of some muscle fibers. Cases of nodular myositis, dermatomyositis or polymyositis may reveal the presence of inflammatory and noninflammatory nodules. Noninflammatory nodules may be present in the blood vessels and the skin and justify the name of dermatomyositis. The structure of the noninflammatory nodules in the authors' case differed from that of the inflammatory nodules of Steiner and

co-workers and of the macroscopic subcutaneous nodules described in rheumatoid arthritis and rheumatic fever. The nodules in this case also differed from Aschoff's nodules and the accumulations of cells in the myocardium of patients with Landry's paralysis. Biopsy of muscle tissue may be an aid to approximately correct diagnosis as in the case here recorded. Biopsy revealed the true nature of a disease which for seven years baffled the efforts of various examiners, but which proved to be located in the muscles and was probably of rheumatic origin.

Journal of Nutrition, Philadelphia

38:105-274 (June) 1949. Partial Index

Relation of Iodine to Goitrogenic Properties of Soybeans. A. W. Halverson, M. Zepplin and E. B. Hart.—p. 113.

Urinary Excretion of Amino Acids and Peptides by Dogs Fed Protein Hydrolysates or Amino Acids. R. H. Silber and C. C. Porter.—p. 155.

Effect of Fat on Calcium and Phosphorus Metabolism in Normal Growing Rats Under a Normal Dietary Regime. C. E. Calverley and C. Kennedy. —p. 165.

Biologic Value of Corn and Wheat Proteins in Male Infant, with Note on Utilization of D-Tryptophan. A. A. Albanese, S. E. Snyderman, M. Lein and others.—p. 215.

Availability of Vitamins from Yeasts: V. Differences in Influence of Live Yeast on Absorption of Pure Thiamine Hydrochloride, Pure Riboflavin and Nitrogen by Human Subjects, and Effect of Distribution of Vitamin Doses. M. Garber, M. M. Marquette and H. T. Parsons. —p. 225.

Distribution of Thiamine in Embryonated Hen Egg: I. Content of Whole Embryo. N. S. Scrimshaw, W. E. Porter and M. W. Scrimshaw. —p. 237.

Journal of Urology, Baltimore

62: 1-92 (July) 1949

Experiences with Fibrin Coagulum in Pyelolithotomy. J. H. Harrison and B. E. Trichel.—p. 1.

Spontaneous Perirenal Hematoma Associated with Hypertension. J. A. Miller and J. J. Cordonnier.—p. 13.

Varix of Renal Vein: Report of Case. A. R. Brin, G. T. Mellinger and R. F. Sharp.—p. 18.

Uncrossed Double Ureter with Rare Intravesical Orifice Relationship: Case Report with Review of Literature. A. J. Lund.—p. 22.

Ureteroperitoneal Anastomosis. C. Ferguson.—p. 30.

Ureteral Reflux in Normal Child. H. M. Gibson.—p. 40.

Papillary Carcinoma of Ureter and Bladder Arising After Nephrectomy for Tumor of Kidney Pelvis. M. K. Bailey, C. A. Fort and H. C. Harling.—p. 44.

Cystitis Emphysematosa: Case Report with a Review of Literature. G. H. Teasley.—p. 48.

Pregnancy Associated with Exstrophy of Bladder. F. E. Rulovits and M. Arnkoff.—p. 52.

*Osteogenesis Occurring in Carcinoma of Prostate. E. C. Coats and J. R. Lisa.—p. 58.

Fibroma of Tunica Vaginalis Testis. G. K. Kawaichi.—p. 61.

Anorchism. R. H. Hepburn.—p. 65.

Prognosis of Testicular Tumors. H. R. Sauer and E. M. Burke.—p. 69.

Vulvar Fusion. P. Nowlin, J. R. Adams and B. C. Nalle Jr.—p. 75.

Hereditary Hemorrhagic Telangiectasia as Cause of Hematuria: 2 Case Reports. J. L. Campbell Jr.—p. 80.

Intracaine Lubricant as Urethral Anesthetic. B. C. Corbus.—p. 89.

Implanter for Radon Seeds for Use with McCarthy Foreblique Panendoscope. J. R. Rinker.—p. 91.

Osteogenesis in Carcinoma of Prostate.—Coats and Lisa report the case of a man aged 57 who complained of lower back pain, weight loss of 30 pounds (13.6 Kg.) in 2 months and anorexia. He had a hard, fixed, slightly enlarged, nontender prostate and tenderness over the spine from the third lumbar to the first thoracic vertebra. Roentgenologic examination revealed ground glass density of the lower three lumbar vertebrae, upper sacrum, left ischium and base of left ilium. The large bowel had a redundant sigmoid extending into a left inguinal hernia and a constant narrowing of the midrectum. He was given diethylstilbestrol. Several months later roentgenologic examination disclosed considerable extension of the osteoblastic process. Since orchiectomy was refused, diethylstilbestrol therapy was continued. He improved symptomatically. About eight months later signs of small bowel obstruction developed. At operation, a Richter hernia containing a loop of obstructed large bowel was found and repaired. The course was progressive, and death occurred two days later. The total diethylstilbestrol administered between Aug. 9, 1946 and July 31, 1947 was 4.095 Gm. Necropsy revealed a large carcinoma of the prostate with extensive bony metastases, metastases to one adrenal and extensive invasion of the soft tissues of the pelvis causing ureteral obstruction and pyelonephritis. Microscopic study of the primary tumor showed fibrosis, resembling bone in its morphologic pattern. The authors say that the pathogenesis of the formation of bone in prostatic carcinoma is obscure. The effect of diethylstilbestrol in bone production probably is slight.

Medical Annals of District of Columbia, Washington

18:285-334 (June) 1949

Simple Blood Viscosity Test for Thrombo-Embolism: Preliminary Observations. J. N. Shadid.—p. 285.

Clinical Use of Aureomycin. E. B. Schoenbach.—p. 290.

Uses and Abuses of Intravenous Therapy and Blood Substitutes. C. S. White.—p. 294.

Spina Bifida Cystica: Review of 70 Cases with Report of Case of Cervical Meningocele. R. O. Warthen, J. M. LoPresti and W. F. Burdick.—p. 298.

Mental Hygiene, Albany, N. Y.

33:353-528 (July) 1949. Partial Index

Opening the Doors of the Mental Hospital to the Public. N. Bigelow. —p. 366.

Responsibility of the Citizen in Bridging the Gap Between Mental Hospital and Community. M. McHee.—p. 376.

Development of Vocational-Rehabilitation Program for the Neuropsychiatric. L. W. Rockower.—p. 386.

Swimming as Activity Therapy. A. Kamm.—p. 417.

Adoptive Parents Need Help, Too. A. L. Rautman.—p. 424.

The Visiting Teacher Looks at the Rejected Child. E. Brower.—p. 432.

Aggressive Behavior. T. V. Owen and M. G. Stemmermann.—p. 436.

Reorientations in Mental-Hygiene Program. E. Ziskind.—p. 443.

Military Surgeon, Washington, D. C.

105:1-102 (July) 1949. Partial Index

Amicrobic Pyuria. R. R. Landes and R. Kinnaird.—p. 1.

*Exfoliative Dermatitis Due to Penicillin and Streptomycin. T. E. Huber.—p. 4.

Report of Case of Loeffler's Syndrome with Concomitant Non-Specific Maculo-Papular Rash. I. L. Hoffman and G. S. Huard.—p. 7.

Mumps and Some Unusual Complications (and Possible Factors Depressing Immunity of Recently Inducted Troops). R. de Rohan Barondes. —p. 12.

Early Regime for Severe Finger Injuries. H. A. Burnett.—p. 25.

Derivatives of Hypothalamus in Human Brain; Their Relation to Extrapyramidal and Autonomic Systems. H. Kuhlenbeck and W. Haymaker. —p. 26.

Multiple Hemorrhagic Telangiectasia (Rendu, Osler, Weber Disease): Case Report with Visceral Involvement. J. M. Rumball.—p. 53.

Physiologic Approach to Congestive Heart Failure. M. G. Brown.—p. 56.

Exfoliative Dermatitis Due to Penicillin and Streptomycin.—Huber presents the history of a man aged 67 who was treated with injections of penicillin and also with aerosol penicillin when bronchiectasis had been demonstrated. A generalized rash with multiple small pustules developed. When medication with penicillin was discontinued, the rash began to fade. Later, when the respiratory symptoms increased again, treatment with streptomycin aerosol was begun. This was also followed by the development of a pustular and vesicular rash which faded when the aerosol treatment was discontinued. This patient had a chronic epidermophytosis. The author reviews the literature on the relationship of antibiotics to concomitant fungous infections of the body surfaces. He stresses that the utilization of penicillin and other antibiotics for a variety of conditions makes it imperative to proceed with the greatest caution in their employment, especially when the patient exhibits epidermophytosis or other dermatologic manifestations of fungous infection.

Missouri State Medical Assn. Journal, St. Louis

46:461-556 (July) 1949

Laboratory Diagnosis of Amebiasis. W. C. MacDonald.—p. 477.

Endometrioma of Umbilicus. O. J. Printz, J. H. Printz and S. Rubin. —p. 479.

Transurethral Prostatectomy: Review of 100 Cases. J. B. Beare and C. A. Wattenberg.—p. 482.

Five Year Results of Cancer Treatment of Ellis Fischel State Cancer Hospital; Report to Physicians of Missouri. J. Modlin.—p. 485.

Method of Using Chest Strap for Precordial Leads. T. S. Fleming. —p. 488.

46:557-620 (Aug.) 1949

Contributions of Psychiatry to General Medicine. W. Overholser.—p. 573.

Selection of Operation for Lesions of Colon and Rectum: Clinical Study with Report of 69 Cases. H. Mahorner and M. Brown.—p. 577.

Improved Methods in Combatting Tetanus. C. Costello.—p. 582.

Sodium Pregnandiol Glucuronidate Determinations in Diagnosis of Pregnancy. M. Yanow and S. D. Soule.—p. 591.

New England Journal of Medicine, Boston

240:987-1030 (June 23) 1949

Esophageal Atresia with Tracheoesophageal Fistula: Epidemiologic and Teratologic Implications. T. H. Ingalls and R. A. Prindle.—p. 987.
*Death Due to Cardiac Disease Following Use of Emetine Hydrochloride in Conditioned-Reflex Treatment of Chronic Alcoholism. E. E. Kattwinkel.—p. 995.
Medical Care for American People: Is Compulsory Health Insurance the Solution? L. S. McKittrick.—p. 998.
Practical Aspects of Better Medical Care. A. W. Allen.—p. 1003.
Psychosurgery. M. Greenblatt and P. G. Myerson.—p. 1006.
Rheumatic Heart Disease, with Mitral and Aortic Stenosis. Periarteritis Nodosa of Lungs.—p. 1018.
Polycythemia Vera. Massive, Subpectoral, Subcutaneous and Hematoma. Splenomegaly. Myeloid Metaplasia of Spleen and Lymph Nodes. —p. 1022.

240:1031-1066 (June 30) 1949

Migrating Thrombophlebitis Associated with Carcinoma. E. A. Edwards. —p. 1031.
Medical Survey of Aleutian Islands (1948). F. Alexander.—p. 1035.
Suprarenal Hemorrhage in Pregnancy: Report of Case with Review of Literature. G. Arnold, A. G. Richer and J. J. Lepore.—p. 1040.
Prophylaxis and Treatment of Heat-Reaction States. L. Friedfeld. —p. 1043.
Preventive Medicine. M. D. Manning.—p. 1047.
Adenocarcinoma of Pancreas, with Retroperitoneal and Splenic Extension, and with Microscopic Metastases to Lungs and Kidney.—p. 1054.
Fibrosarcoma of Femur, Invading Knee Joint; Possibly Related to Ingestion of "Radium Water."—p. 1056.

Death Following Use of Emetine Hydrochloride in Alcoholism.—Kattwinkel discusses the use of emetine hydrochloride in the conditioned reflex treatment of chronic alcoholism and reports the case of a man aged 33 who died as the result of this treatment. Necropsy revealed a toxic myocarditis, chronic fibrinous pericarditis, chronic myocarditis and edema of the myocardium, cardiovascular collapse, pulmonary congestion and edema, congestion of the liver, spleen, kidneys and intestine, cerebral congestion and edema, bilateral hydrothorax, retroperitoneal edema, focal necrosis and fatty degeneration of the liver. Experience of others and lack of cardiac supervision of this case during treatment suggest the following rules as minimum requirements: an electrocardiogram should be taken before, during and one or two weeks after treatment; suspected organic heart disease should contraindicate the treatment; the total dose of emetine should not exceed 0.6 Gm. (10 gr.) in any one course; at least two months should elapse between courses of treatment in patients who show electrocardiographic changes during treatment; when significant electrocardiographic changes occur, treatment should be stopped at once; and signs of toxicity—diarrhea, fatigue, dyspnea, muscular tremors or weakness—and dizziness should be carefully watched for. If these develop the heart should be watched. Increasing tachycardia with the patient at rest calls for at least temporary cessation of treatment.

241:1-38 (July 7) 1949

Acute Appendicitis Complicating Acute Infectious Diseases of Childhood. K. B. Lawrence and G. W. Waring Jr.—p. 1.
*Evolution of Intercapillary Glomerulosclerosis. H. A. Derow and M. J. Schlesinger.—p. 7.
*Reliability of Male North American Frog (Rana Pipiens) in Diagnosis of Pregnancy. S. L. Robbins and F. Parker Jr.—p. 12.
Fatal Pancytopenia Following Use of "Mesantoin"; Report of Case. R. W. Weller and J. Metcalfe.—p. 17.
Active Immunization. G. Edsall.—p. 18.
Fulminating Atypical Viral Pneumonia; Rheumatic Heart Disease, with Mitral Stenosis.—p. 27.
Bronchial Adenoma.—p. 30.

Intercapillary Glomerulosclerosis.—Derow and Schlesinger say that in 1936 Kimmelstiel and Wilson described a diffuse, microscopic lesion in the kidneys of 8 diabetic patients with hypertension, profuse albuminuria and generalized edema. The abnormality was termed intercapillary glomerulosclerosis and consisted of striking changes in the intercapillary tissue characterized by large hyaline masses confined to the centers of the glomeruli or glomerular lobules. Less severe degrees of this hyalinization were also reported. The available published data are inconclusive concerning the period necessary for the evolution of the lesions of intercapillary glomerulosclerosis. An opportunity was recently provided to study a patient who had had diabetes mellitus for the last eight years of her life. Four years before death a nephrectomy had been performed for a suspected neoplasm. Two years before death, six years after the onset of diabetes, massive albuminuria developed. Comparative histologic study of the surgically removed kidney and that obtained at necropsy provided a basis for elucidating the development of the renal disorder and the correlation of the latter with the clinical picture. The kidney obtained at necropsy from this patient showed severe intercapillary sclerosis in 47.5 per cent of the glomeruli. The other kidney, removed four years earlier for a suspected neoplasm, had shown no evidence of intercapillary glomerulosclerosis. Six years after the onset of diabetes mellitus, neuropathy, retinopathy and massive albuminuria developed and persisted until the eighth year, when the patient died from renal insufficiency. At no time was the nephrotic syndrome present. The lesions of intercapillary glomerulosclerosis definitely developed during the last four years of life and possibly only during the last two years, when the degenerative phenomena and massive albuminuria were found.

American Frog in Diagnosis of Pregnancy.—Robbins and Parker point out that in recent years many reports have appeared on the use of male amphibia for the diagnosis of pregnancy. Many species of frogs and toads have been described as useful for this procedure. At present two species have received the greatest attention. Galli-Mainini, working in South America, has used a toad indigenous to that area—the Bufo arenarum. In the United States a widely indigenous frog, the common leopard frog known as the Rana pipiens, has been used for this work. To date reports from North American sources have been of a provisional type, and no extended clinical trial has yet been cited. Three hundred consecutive urine specimens sent to the laboratory of the Mallory Institute of Pathology of the Boston City Hospital for the diagnosis of possible pregnancy comprise this report. The male frog (Rana pipiens) was used for the hormonal assays of these 300 urine specimens. An over-all accuracy of approximately 96 per cent has been achieved. One false-positive reaction, now believed to be readily avoidable, and 12 false-negative reactions were encountered. The analysis of the results indicates that most of the false-negative reactions were encountered in cases of normal pregnancy within the first month of amenorrhea. Several positive reactions were obtained in other cases within the first four days of amenorrhea, indicating that the problem is not one alone of insensitivity of the frog to chorionic gonadotropin, but of varying hormone levels in individual pregnancies. The results obtained appear to justify the continued use and study of this diagnostic technic.

New Orleans Medical and Surgical Journal

101:565-630 (June) 1949

Psychiatric Treatment in Psychosomatic Illnesses. O. S. English.—p. 565.
Disseminated Cryptococcus Neoformans: Case Report. R. Haspel, J. Baker and M. B. Moore Jr.—p. 573.
*Comparative Study of Löffler's and Weingarten's Syndrome. H. S. Wise.—p. 576.
Leprosy in Its Relation to Practicing Physician. G. W. McCoy.—p. 585.
Interstitial Pregnancy with Perforation and Intra-Abdominal Hemorrhage. D. W. Goldman.—p. 588.
Carcinoma of Female Urethra. G. C. Tomskey and J. Burton.—p. 590.
Surgery of the Aged. S. M. Copland.—p. 593.
Present Status of Chloromycetin Therapy. E. H. Payne.—p. 597.
Allergic Epilepsy. W. A. McGee.—p. 601.

Comparative Study of Löffler's and Weingarten's Syndromes.—Wise points out that in 1932 and again in 1936 Löffler called attention to a condition characterized by transitory infiltration of the lung with eosinophils. In 1934 Weingarten of India observed an entity which he called tropical eosinophilia. This symptom complex, like Löffler's syndrome, was characterized by infiltration of the lung with eosinophils. Weingarten, although aware of Löffler's work, apparently had not read Löffler's original articles but rather a summary, and so did not recognize the close similarity of the syndrome that he was reporting and Löffler's "type E" complex. He considered that his syndrome was a new disease entity and that "there is no connection between the disease and that described by Löffler." Subsequently, other writers have continued to treat these as two separate complexes, while some have argued that they are expressions of the same syndrome. Wise compares the two conditions and concludes that two clinically similar syndromes have been described which require diagnostic differentiation because of the morbidity and mortality in the one type

(Weingarten's syndrome) and the transient character of the other (Löffler's syndrome). Furthermore, there is no specific therapy for Löffler's syndrome, but in Weingarten's syndrome arsenicals are specific.

New York State Journal of Medicine, New York

49:1487-1614 (July 1) 1949

Critical Appraisal of Spinal Analgesia and Anesthesia for Obstetrics. B. A. Greene.—p. 1527.
Continuous Caudal Anesthesia in Obstetrics: Observations of Results in 12,000 Cases. J. Heralich.—p. 1531.
Inhalation Anesthesia in Obstetrics. K. G. Jahraus.—p. 1535.
Obstetrician's View of Modern Anesthesiology. S. L. Siegler.—p. 1538.
Report of Clinical Anesthesia in Gynecologic Surgery. G. H. Finer, S. Jaffe and S. G. Hershey.—p. 1541.
Quantitative Pharmacologic Studies with Pentothal. L. C. Mark, E. M. Papper, B. B. Brodie and E. A. Rovenstine.—p. 1546.
Prophylactic and Therapeutic Indications for Tracheotomy During Surgical Intervention. P. Friscia and H. F. Bishop.—p. 1550.
Use of Intravenous Quinidine During Clinical Anesthesia for Treatment of Acute Arrhythmias. V. J. Collins.—p. 1554.
Recognition and Management of Cardiac and Circulatory Emergencies During Anesthesia. S. R. Masiello and A. A. Lombardi.—p. 1557.
Ectopic Pregnancy with Study of Associated Clinical Syndrome. H. C. Ingraham, M. M. Gardner and L. E. Witkin.—p. 1562.
Subcutaneous Cysts of Rheumatoid Arthritis. P. L. Staub.—p. 1566.
Administration of Curare by Electrophoresis: Preliminary Report. E. Neuwirth.—p. 1569.
Torsion of Omentum. W. J. Puderbach.—p. 1571.

Northwest Medicine, Seattle

48:373-444 (June) 1949

Adequate Pelvicephalometry. H. V. Hartzell.—p. 393.
Subarachnoid Hemorrhage: Report of 3 Cases. L. G. Christianson and R. S. Totten.—p. 396.
Subtotal Phalangectomy for Relief of Painful Clavus. E. A. LeCocq.—p. 398.
Differential Diagnosis of Jaundice. R. K. Eggers.—p. 400.
Eye Injuries. M. J. Reeh.—p. 403.
Cancer in Childhood. H. D. Chipps.—p. 408.

48:445-516 (July) 1949

Fibrositis and Psychogenic Backache. K. K. Sherwood and B. Zimmerman.—p. 465.
Comparison of Urinary Chloride Excretion in Patients with Ascites and Cardiorenal Disease. F. R. Schemm, J. A. Layne and A. K. Atkinson.—p. 469.
Hematologic Variations in Capillary Blood. M. M. Orona and R. Stenkamp.—p. 472.
Endometrioma of Thigh. L. L. Nunn.—p. 474.
Maternity Blues. A. F. Lee.—p. 475.
Reiter's Disease: Syndrome of Arthritis, Urethritis and Conjunctivitis: Report of Case of Five Years' Duration. C. Krebs and W. L. Craddock.—p. 477.
Treatment of Ludwig's Angina. G. S. Player.—p. 480.
*Treatment of Chronic Alcoholism by Intravenous Barbiturates. F. Lemere and P. O'Hollaren.—p. 482.

Intravenous Barbiturates for Chronic Alcoholism.—According to Lemere and O'Hollaren, over 5,000 patients have been treated during the past fourteen years for alcoholism at Shadel Sanitarium in Seattle. The basis for this treatment has been the conditioned reflex method of producing aversion to alcoholic beverages by means of the drug emetine. The authors found that the conditioned reflex treatment is fairly effective in primary alcoholism but not so effective in patients in whom the alcoholism is secondary to a neurosis. They realized that in patients who relapsed after the conditioned reflex treatment it would be necessary to treat the underlying neurosis. One of the authors began experimenting with thiopental (pentothal®) narcosynthesis in 1941, and since then the authors have developed the intravenous barbiturate treatment to the point where it has become a major part of their over-all therapy of secondary alcoholism. The following indications for thiopental therapy have been evolved: 1. Any patient who drinks primarily to relieve nervous tension or emotional strain, and who is nervous even when he is not drinking, is given thiopental therapy as an adjunct to his conditioned reflex treatment. 2. Any patient under 30 years of age is routinely given thiopental therapy as well as conditioning. 3. Combined thiopental therapy and conditioning is given to any patient who has a psychopathic personality or gives a history of a psychosis or neurosis. 4. The combined treatment is given to patients with a criminal record. 5. Thiopental is given either alone or in combination with reconditioning in patients who have relapsed after one or two previous conditioning treatments. 6. Thiopental is given alone in a few patients who are unable to take the conditioning treatment because of some physical contraindication, such as heart disease. At present, 30 per cent of the patients treated by the authors are receiving thiopental as well as conditioning treatment. During the past three years the authors have treated 503 patients with thiopental alone or in combination with conditioned reflex therapy. A follow-up on 479 of these patients shows that 57 per cent are still abstinent and 43 per cent relapsed after treatment.

Ohio State Medical Journal, Columbus

45:665-764 (July) 1949

The Coroner in Court. C. Hey.—p. 689.
Diphtheria. P. Q. Peterson.—p. 692.
Cancer Clinic in a Small Hospital. R. J. Foster and M. M. Yaberg.—p. 698.
Case of Abdominal Pregnancy Secondary to Rupture of Rudimentary Uterine Cornu. S. T. Garber and R. W. Kistner.—p. 700.
Epidural Spinal Abscess. C. W. Elkins and D. J. Arnold.—p. 702.
Fat Necrosis of Omentum with Perforated Duodenal Ulcer. A. E. Rhoden.—p. 706.
Hyperinsulinism Caused by Islet Cell Adenoma; Review of Literature and Report of Successful Surgical Case. C. H. Leech and G. E. Noble.—p. 707.
Mesenteric Cyst: Case Report of Successful Removal Without Resection of Adjacent Bowel in Infant. J. M. Strait.—p. 714.
Soliloquy on a Dead Fish. M. Fischer.—p. 715.

Pediatrics, Springfield, Ill.

4:1-148 (July) 1949

Vaccination of Children with Various Chorioallantoic Passages of Measles Virus: Follow-Up Study. E. P. Maris, S. S. Gellis, F. Shaffer and others.—p. 1.
New Repository Penicillin (Form of Aqueous Penicillin G Procaine) in Infants and Children. H. M. Gezon, Duke Cho Choy, D. T. Hellyer and others.—p. 9.
Congenital Myasthenia Gravis. H. G. LaBranche and R. N. Jefferson.—p. 16.
*Bronchiectasis in Childhood: I. Clinical Survey of 160 Cases. C. E. Field.—p. 21.
Porphyrinuria: Report of Unusual Case. N. C. Woody.—p. 47.
*Pathogenesis of Fibrocystic Disease of Pancreas: Study of 36 Cases with Special Reference to Pulmonary Lesions. W. W. Zuelzer and W. A. Newton Jr.—p. 53.
Cyclic Neutropenia in Infant. S. Borne.—p. 70.
Studies of Penicillin in Pediatrics. B. M. Kagan, L. Kishner, A. Milzer and M. Sacks.—p. 79.
Chronic Resistance to Sleep in Infancy. B. Spock.—p. 89.
Pancreatic Function in Scarlet Fever. P. V. Véghelyi.—p. 94.
Anaphylactoid Purpura Complicated by Irreducible Intussusception. C. D. Benson and E. A. Martmer.—p. 102.
Bedside Cabinet for Newborn Infant Designed for Rooming-In Facilities. P. A. McLendon and J. Parks.—p. 106.
Bronchogenic Cysts of Mediastinum. L. M. Hardy.—p. 108.
Evaluation of Electroencephalography in Diagnosis of Brain Tumors of Children. J. F. Drumheller, H. M. Keith and R. G. Bickford.—p. 114.

Bronchiectasis in Childhood.—Field reports 160 children, 67 boys and 93 girls, from under 1 year of age to 12 years of age, with irreversible bronchiectasis. The age at onset of symptoms was in the first year of life in approximately one fifth of the cases, the number thereafter declining with advancing age. In 89 cases (55.6 per cent) the parental history associated the onset of symptoms with an attack of pneumonia or pertussis. The characteristic features of the disease included a constant cough with or without sputum. Hemoptysis was rare, but in 53 cases (33.1 per cent) there were associated asthmatic symptoms. More children were underweight than overweight for their age and many had chest deformities. Clubbing occurred in 70 (43.7 per cent) patients, and when present it was diagnostic of irreversible bronchiectasis. Physical signs in the chest were variable, but the most useful diagnostic observation was localized rales on deep inspiration over the suspected area of a lung. In comparison with normal children, there was a pronounced increased incidence of pneumonia at all ages. There was no suggestion that bronchiectasis increased or decreased susceptibility to tuberculosis. Sinusitis is frequently associated with bronchiectasis, although the exact relationship remains obscure. Bronchography is by far the most important diagnostic procedure and is an invaluable method of studying the development of the disease. Tubular dilatation was the commonest type of bronchiectasis. In 137 patients (85.6 per cent) the disease was situated in the lower lobe of the left lung, and in 105 (65.6 per cent) in the lingula, but in no case was the lingula affected as the only lobe. The disease has shown a predilection for lobes the bronchi of which are directed against gravity toward the main bronchus and those which have an anatomic

peculiarity impeding drainage. Massive collapse of the lung was associated with bronchiectasis in 74 cases (46.3 per cent). It is important to recognize in children that bronchial dilatation may be reversible. Duration of the dilatation and its contour is helpful in the diagnosis of irreversibility. Bronchoscopy was not helpful in diagnosis or localization of bronchiectasis.

Fibrocystic Disease of Pancreas.—Zuelzer and Newton report microscopic studies and clinical data from 36 fatal cases of fibrocystic disease of the pancreas supporting the concept that the basic pathologic process consists in an anomaly of secretory function and frequently involves other glandular structures besides the pancreas, notably the respiratory tract, the intestinal tract and the biliary system. The development of fixed organic lesions in the affected organs was observed to be variable and to depend to some extent on the time factor. Extrapancreatic lesions were rare and inconspicuous in infants dying in the newborn period, but in patients who had survived the newborn period involvement of the respiratory tract was constant and changes in other systems were commonly encountered. Variations in the intensity of the pancreatic changes suggested the possibility of a postnatal onset of the process in some cases. Inspissation of abnormally viscid meconium in the small intestine was the sole demonstrated cause of complete intestinal obstruction in 4 of the 5 patients dying with meconium ileus in the newborn period. Inspissation of meconium as part of the disease process can lead to secondary obliteration and organic atresia of the intestine in utero. Evidence was presented to show that the atresia of the cystic duct frequently encountered in older infants is due to a similar process of secondary obliteration. A detailed study of the pulmonary lesions observed in 28 patients with respiratory symptoms indicated that the original pathologic process in the lungs is analogous to that in the pancreas and consists in an accumulation of viscid secretion in the air passages. The resulting state of respiratory obstruction is an important component of the disease process which by itself can lead to death. The respiratory tract, in contrast to the pancreas, being accessible to bacterial invaders, usually becomes the seat of secondary infection which leads to progressive inflammatory changes. Nutritional deficiencies play a secondary though clinically important part in the evolution of the disease process.

Philippine Medical Association Journal, Manila

25:211-258 (May) 1949

Cancer of Rectum: Report of 41 Cases. J. Estrada, P. T. Nery and A. Banzon Jr.—p. 231.
Unusual Role of Roentgenology in Diagnosis of Malignant Lesion of Stomach (Report of Case). P. S. Chikiamco.—p. 239.
Analysis of Poliomyelitis Seen at 10th General Hospital During Past Year. F. Blanton.—p. 243.

Proc. Soc. Exper. Biol. & Med., Utica, N. Y.

71:169-334 (June) 1949. **Partial Index**

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Serum Cholinesterase in Hyperthyroidism. L. Gitman, I. J. Greenblatt and N. Mitchell.—p. 179.
Interrelationship of Vitamin B12 and Choline: I. Effect on Hemorrhagic Kidney Syndrome in Rat. A. E. Schaefer, W. D. Salmon and D. R. Strength.—p. 193.
Relation of Oxygen and Temperature in Preservation of Tissues by Refrigeration. J. H. Hanks and R. E. Wallace.—p. 196.
Hemagglutination by Normal and Poliomyelitis Stool Suspensions. A. Milzer and P. Adelman.—p. 206.
Dosage-Mortality in Rats Given Total Body Roentgen Irradiation. W. G. Clark and R. P. Uncapher.—p. 214.
Resemblance of Strain of Swine Influenza Virus to Human A-Prime Strains. T. Francis Jr., J. J. Quilligan Jr. and E. Minuse.—p. 216.
*Tumorous Growths in Pituitary and Trachea Following Radiotoxic Dosages of I^{131}. A. Gorbman.—p. 237.
*Observations on Experimental Dental Caries: XI. Influence of Pregnancy. H. Granados, J. Glavind and H. Dam.—p. 279.
Evidence for Steroid Compound in Cane Juice Possessing Antistiffness Activity. L. E. Ross, W. J. van Wagtendonk and R. Wulzen.—p. 281.
*Electron Microscope Studies of Vesicle and Spinal Fluids from Case of Herpes Zoster. A. S. Evans and J. L. Melnick.—p. 283.

Tumorous Growths Following Radiotoxic Dosage of I^{131}.—Gorbman found that following doses of radioactive iodine sufficient to cause destruction of most or all of the thyroid, tumorous enlargements were found in the pituitary glands and tracheas of mice. Hypophyseal growths as large as 240 mg. (control, 2.1 mg.) were found. Less than 10 per cent of animals killed more than two hundred and fifty days after administration of I^{131} had pituitaries smaller than 10 mg. in weight. Tracheal tumors of the fibrous tunica propria, obstructing the tracheal lumen, were of lower incidence (4 per cent) but appeared earlier. Fibrous thickenings of the tunica propria, and metaplastic regeneration of tracheal epithelium were more commonly observed.

Influence of Pregnancy on Dental Caries.—Granados and associates studied the influence of pregnancy on carious processes in the teeth of hamsters reared from weaning for 100 days on a suboptimal diet. Their respective litter mates served as controls. The results show that pregnancy does not influence caries activity.

Electron Microscope Studies on Fluids in Herpes Zoster.—Evans and Melnick studied the vesicular and spinal fluids of a patient with herpes zoster under the electron microscope and found in both fluids elementary bodies of similar size, averaging 227 microns in diameter. Comparing these particles with those in the vesicular fluids of patients with herpes simplex and chickenpox, the authors found in herpes simplex particles averaging 213 microns in diameter, and in chickenpox particles of 245 microns.

Review of Gastroenterology, New York

16:537-606 (July) 1949

Anal Eroticism and Certain Anorectal Syndromes. E. Granet and E. Hammerschlag.—p. 549.
Hemolytic Escherichia Coli as Cause of Diarrhea. T. N. Barnett.—p. 564.
Clinical Report on Treatment of Colonic Disorders with Polymolecular Lactic Acid Crystals Combined with Lactose. J. R. Reuling, A. X. Rossien and E. M. Rappaport.—p. 574.
Diagnosis of Carcinoma of Rectum by Cytologic Study. A. J. Cantor. —p. 582.
Aspects of Proctology in Brazil. W. Gentile de Mello.—p. 585.

Southern Medical Journal, Birmingham, Ala.

42:359-454 (May) 1949

Pyogenic Empyema with Extension Below Diaphragm. W. L. Guyton and H. W. Jones Jr.—p. 359.
Carcinoma of Cervix. H. F. Hare and C. F. Sornberger.—p. 365.
Radical Treatment of Bladder Tumors by Electroresection. H. P. McDonald, W. E. Upchurch and C. E. Sturdevant.—p. 372.
*Sicklemia: Its Pathological and Clinical Significance. H. R. Pratt-Thomas and P. K. Switzer.—p. 376.
Balanitis Xerotica Obliterans: Report of 2 Cases. W. A. Showman. —p. 384.
*Fibrositis. G. D. Wilson.—p. 387.
Use of Eresiphake in Cataract Extraction. E. R. Veirs.—p. 392.
Hyperpyrexia Due to "Demerol." M. E. Flipse and M. J. Flipse.—p. 395.
Multiple Subcutaneous Abscesses: Produced by Hypodermic Injection of Feces. M. Sullivan and A. Trosow.—p. 402.
Familial Myoclonus: Report of 4 Cases with Electroencephalograms. W. S. Littlejohn.—p. 404.
Observations on Patients with Amyotrophic Lateral Sclerosis. T. D. Spies and R. E. Stone.—p. 410.
Physician's Responsibility in Cerebral Palsy. H. E. Gillette.—p. 411.
Diagnosis and Treatment of Bulbar Poliomyelitis. P. M. Stimson.—p. 415.
Observations on 1948 Poliomyelitis Epidemic in North Carolina. J. W. R. Norton and C. P. Stevick.—p. 420.
Epidemiologic Implications of Poliomyelitis Virus in Throat. A. E. Casey, W. I. Fishbein, F. M. Schabel Jr. and H. T. Smith.—p. 427.
Contribution to Study of Tropical Eosinophilia. G. E. de la Riva.—p. 429.
Transverse Colostomy in Chronic Ulcerative Proctocolitis. F. B. Campbell.—p. 435.
Meddlesome Midwifery. E. L. Dorsett.—p. 439.

Sicklemia.—Pratt-Thomas and Switzer say that in a recent study of over 3,000 Negroes from the Sea Island area of South Carolina, the sickle cell trait was found in 14 per cent. In 2,008 necropsies performed on Negroes, the majority of whom lived in the same area, some form of sickle cell disease was found in 115 (5.72 per cent). Sicklemia was found in 92 (4.58 per cent) and sickle cell anemia in 23 (1.14 per cent). The authors believe that sicklemia need not always be clinically significant in that this trait does not necessarily predicate a shortened life. However, if a person with a well developed sickle cell trait experiences some accident or illness, which induces a significant degree of sickling, this change then seems at times to be responsible for lesions and untoward results that would not occur otherwise. The authors have observed that patients with sicklemia often do poorly after surgical procedures. Profound sickling is the major finding in these patients at necropsy. Observations made by the authors have confirmed Kimmelstiel's observation that infarctive phenomena in sickle cell disease are often unaccompanied by demonstrable

thrombosis. Massive encephalomalacia and bilateral renal cortical necrosis are two outstanding examples of such a phenomenon in cases in which no actual thrombus formation was demonstrable in the vessels supplying these sites. The fact that tissue ischemia may be found without mechanical vascular obstruction lends support to the theory that the abnormally shaped sickle cells can form agglutinated clumps which produce obstruction and infarction without actual thrombosis. The red corpuscles of Negroes with the sickle cell trait who show no anemia, evidence of blood destruction or other recognizable symptoms form sickle cells as readily under anoxic conditions as do the erythrocytes of persons with sickle cell anemia. There is no relation between the degree of anemia and the ability of the red cells to form sickle cells in vitro. The authors believe that the deformity of the erythrocytes is of fundamental importance in patients with sickle cells disease whether or not they have anemia.

Fibrosis.—Wilson defines fibrositis as an inflammatory process of the various fibrous tissues of the body giving rise to distinct symptoms that are frequently loosely spoken of as muscular rheumatism. Classification of fibrositis into two common types was found most convenient. Primary fibrositis is unaccompanied by and is independent of other disease. Secondary fibrositis is secondary to hypertrophic arthritis, alcoholism, diabetes, tuberculosis, menopausal syndrome, faulty metabolism, hypothyroidism and repeated trauma. Of the 80 cases observed by the author 44 were primary fibrositis and 36 were secondary fibrositis. Physical therapy is the best treatment for fibrositis. The local application of deep heat with short wave diathermy is most beneficial. The most efficient method was found to sandwich the involved area between pad applicators. Massage is employed following the use of diathermy. Primary fibrositis required an average of five treatments of physical therapy administered five to seven days apart. Secondary fibrositis required an average of seven treatments of physical therapy. Tenderness over the greater and lesser occipital nerves unilaterally was the commonest observation in patients with fibrositis who complained of headache. Fibrositis was asymptomatic in areas involved in poliomyelitis and symptomatic in the uninvolved areas in the same patient. The use of neostigmine in a 1:1,000 dilution subcutaneously given in serial injections was an adjunct to physical therapy.

Southwestern Medicine, El Paso, Texas

29:129-152 (July) 1949

Psychiatry for Senescence. C. H. Barnacle.—p. 137.
Pregnancy Complicated by Coarctation of Aorta: Case Report. C. C. Stapp.—p. 145.

Texas State Journal of Medicine, Fort Worth

45:333-458 (June) 1949

Looking to the Future in the Light of the Past. T. Miller.—p. 340.
Rabies: A Community Problem in Texas. A. J. Scull.—p. 343.
Suggestions for Management of Acute Poison Ivy Dermatitis. J. B. Howell.—p. 349.
Types of Positive Contact Orbital Implants. R. C. House.—p. 354.
Office Gynecology. C. E. Willingham and C. Anderson Jr.—p. 357.

45:459-544 (July) 1949

Certain Epidemologic Aspects of Poliomyelitis. G. W. Anderson.—p. 465.
Use of Immune Serum Globulin (Human) as Prophylaxis Against Poliomyelitis. A. Bloxsom.—p. 468.
Chemotherapy and Poliomyelitis: Use of Darvisul on Human Subjects. P. R. Harrington.—p. 470.
Decline in Streptococcic Infections. A. L. Hoyne.—p. 474.
The Rh Antibody Problem: Differentiations of Agglutinins, Agglutinoids and Cryptagglutinoids. J. M. Hill, A. F. Reid and S. Haberman.—p. 477.
Modern Management of Acute Abdominal Conditions Requiring Surgery. The General Practitioner's View Point. C. E. Bosshardt.—p. 481.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

57:273-330 (July) 1949

Toxemias of Late Pregnancy. H. G. Watson.—p. 273.
Early Ambulation. R. L. Byron and H. G. Bell.—p. 284.
Enterocele. J. W. Dowsett.—p. 289.
Acute Pancreatitis Following Cholangiography. R. L. Zech.—p. 295.
Endometriosis of Vulva. E. D. Rothman.—p. 297.
Technical Reconstruction Following Total Gastrectomy. W. L. Rogers and A. C. Daniels.—p. 301.
Removal of Corpus Luteum in Early Pregnancy. J. C. Dunlap.—p. 308.

Wisconsin Medical Journal, Madison

48:473-572 (June) 1949

Subacute Bacterial Endocarditis: Treatment with Sulfonamides and Penicillin. H. L. Correll and L. J. Tauber.—p. 491.
*Prolonged Rest Vs. Ambulatory Treatment of Rheumatic Fever. C. M. Kurtz.—p. 498.
Office Gynecology. J. L. Baer.—p. 504.
*Tularemia (Rabbit Fever) in Wisconsin. B. B. Morgan.—p. 508.
The Sex Deviate Problem in Wisconsin. H. Veit.—p. 511.
Torsion of Testicle. S. J. Silbar.—p. 514.

48:577-664 (July) 1949

Cancer of Colon and Rectum with Special Reference to (1) Earlier Recognition of Alimentary Tract Malignancy; (2) Secondary Delayed Re-entry of Abdomen in Patients Exhibiting Lymph Node Involvement; (3) Subtotal Primary Excision of Colon; (4) Operation in Obstruction. O. H. Wangensteen.—p. 591.
Clinical Allergy for Nose and Throat Specialist. T. L. Squier.—p. 593.
Streptomycin in Treatment of Tuberculosis. G. C. Owen.—p. 601.
Care of Hip Fractures in Rural Community. R. L. MacCormack.—p. 603.
Emotional Aspects of Organic Disease. H. W. Brosin.—p. 607.
Carcinoma of Ampulla of Vater. K. E. Lemmer.—p. 611.

Rheumatic Fever: Prolonged Rest or Ambulatory Treatment.—Kurtz cites a group of 25 cases of severe rheumatic heart disease, which were characterized by extensive valvular damage, tremendous cardiac enlargement and decompensation occurring in early adult life. None of these patients had been confined to bed for more than a few days during the active stage of rheumatic infection. In contrast to this group are the results in 96 patients who have undergone long periods of bedrest in a convalescent home. These included 41 boys and 55 girls between the ages of 4 and 14 years. Every child is kept at complete bedrest, without bathroom or table privileges, until the temperature, pulse, white blood cell count and sedimentation rate return to normal and remain so for two weeks. The patient then is permitted gradually to increase his activity. As soon as the child has proved his ability to climb as many stairs as will be required of him on his return to home and school, he is discharged to his physician. For the past three years patients have been started on a sulfonamide drug as soon as they enter the quiescent stage and are discharged on the dose which maintains a blood level of between 2 and 8 mg. per hundred cubic centimeters. During the first year and a half that the home was in operation about a third of the children were inoculated intradermally with increasing doses of an alum-precipitated toxin of the New York 5 strain of hemolytic streptococci. Later, stock scarlet fever toxins were substituted. Booster doses were given at intervals of six months at first, but after a time the interval was shortened to four months. Another third of the children were given small doses of a sulfonamide drug, and the remainder were given no prophylactic treatment whatever. Published reports indicate that rheumatic fever leads to permanent cardiac damage in 60 to 75 per cent of all cases. There is evidence that lack of bedrest in active rheumatic fever is an important factor in the development of severe rheumatic heart disease with massive cardiac dilatation. Prolonged bedrest, particularly in a well organized convalescent home, appears to prevent permanent cardiac damage in the majority of cases or restricts the damage to a minimum. Recurrences have been reduced to 7 per cent in a small series of patients immunized with hemolytic streptococcus toxin and to 3 per cent in a larger series by means of continuous prophylaxis with a sulfonamide drug. By a three-point attack consisting of (1) early diagnosis, (2) proper treatment, and (3) adequate prophylaxis against recurrences, rheumatic heart disease seems largely preventable.

Tularemia in Wisconsin.—Morgan says that tularemia was not reported in Wisconsin until 1928. Of the 470 human cases of tularemia which have been reported since then, approximately 66 per cent were derived from direct contact with rabbits. Wood ticks, deer flies, game birds (partridge, pheasant and prairie chicken) muskrats, beavers, cats, squirrels, skunks, horses and dogs which had killed rabbits have all been mentioned as sources of human cases. The mortality rate was 4 per cent. Of the four clinical types of tularemia, 115 patients had the ulceroglandular type, 139 patients had the glandular type, 93 patients contracted the typhoidal type and only 6 patients had the oculoglandular tularemia. One hundred and seventeen cases were listed as unclassified. Tularemia is somewhat seasonal, with November the high month, which coincides with the hunting season. The high year was 1939, with 54 cases.

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FOREIGN

An asterisk (*) before a title indicates that the article is abstracted. Single case reports and trials of new drugs are usually omitted.

Practitioner, London

163:1-88 (July) 1949. Partial Index

Examination of Blood. J. Innes.—p. 1.
Biopsy. C. E. Dukes.—p. 7.
Examination of Stools. H. B. May.—p. 13.
Throat Swabs. R. D. Stuart.—p. 17.
Bacteriological Investigation of Pulmonary Tuberculosis from Aspect of Clinical Pathology. D. B. Cruickshank.—p. 20.
Glycosuria. A. Lyall.—p. 25.
Investigation of Tinea Infestations. C. H. Whittle.—p. 31.
Blood Cultures. R. W. Fairbrother.—p. 33.
Blood Agglutination Tests. J. Bamforth.—p. 36.
Tests of Renal Function. H. E. Archer.—p. 43.
Examination of Cerebrospinal Fluid. D. P. King.—p. 49.

Acta Haematologica, Basel

2:133-200 (July) 1949. Partial Index

*Puncture of Spinous Process of Vertebra, New Method of Exploration of Bone Marrow. G. Bickel and R. Della Santa.—p. 133.
Pathogenesis of Thrombocythemia. B. Jasiński.—p. 145.
*Clinical and Experimental Observations on Effect of Thiouracil and Thioureа on Blood and Bone Marrow. M. Rachmilewitz and A. Rosin.—p. 153.
Determination of Heparin in Blood. L. B. Jaques.—p. 188.

Puncture of Spinous Process of Vertebra for Examination of Bone Marrow.—Bickel and Della Santa used the method of puncturing spinous processes of vertebrae for bone marrow examination in about 100 cases and have concluded that the method has decided advantages. They describe the technic of spinovertebral puncture and stress that it is an easy maneuver and that it is more easily accepted by patients than is the sternal puncture. It gives essentially the same information on the activity of the bone marrow as that obtained by the sternal puncture, both in normal and in pathologic cases.

Effect of Thiouracil and Thioureа on Blood and Bone Marrow.—Since 1945 Rachmilewitz and Rosin treated 60 patients who had thyrotoxicosis with antithyroid drugs. The majority had a severe form of toxic diffuse goiter. In 8 of the 30 patients receiving thiouracil leukopenia developed, which in 4 cases was severe and accompanied with a rise in temperature. In these 4 the medication was either discontinued altogether or replaced by another antithyroid preparation. One of these 4 patients died, the cause being agranulocytosis and jaundice. In the other 4 patients the leukopenia was moderate and not accompanied with other adverse effects. The leukocytes returned to normal values in spite of continued medication. Methylthiouracil caused leukopenia in only 2 of 30 patients; it was moderate in 1 and severe in the other. The authors administered large doses of thiouracil to 36 rats by intraperitoneal injection. Aplasia of the bone marrow or depletion of granulocytes was not noted in any of these animals. Leukocyte and differential counts made on the peripheral blood of rats receiving thiouracil in drinking water for longer periods failed to show conclusive deviations from the normal. The authors feel that species specific and individual sensitization must play an important role in the production of granulocytopenia in general and of the toxic reaction to thiouracil in particular. A cumulative toxic effect on human bone marrow seems probable. The previously damaged bone marrow appears to be more sensitive to sudden allergic reactions. Other conditioning factors, as yet unknown, may be essential in the precipitation of the allergic reaction of the blood and bone marrow to thiouracil.

Boletín de la Asociación Méd. de Puerto Rico, Santurce

41:101-136 (April) 1949. Partial Index

*The Wolff-Parkinson-White Syndrome: A Study of 6 Cases. R. M. Suárez Jr. and R. M. Suárez.—p. 101.

Wolff-Parkinson-White Syndrome.—Suárez and Suárez report observations on 6 cases of Wolff-Parkinson-White syndrome, encountered among 4,700 electrocardiographic records. The ages in this group varied between 15 and 54 years. There was an equal number of male and female subjects. One patient had had repeated attacks of paroxysmal tachycardia since the age of 5 years. Recurrent episodes of tachycardia was the most frequent complaint, although 2 patients never experienced palpitations. In 5 patients there were no clinical signs of heart disease, but the sixth showed moderate hypertension with left ventricular hypertrophy. There were no cases of Wolff-Parkinson-White syndrome or of any other congenital anomaly found in the relatives of 5 patients. Phonocardiographic studies in 5 patients showed increased intensity of the first heart sound at the apex in only 2 instances.

Medizinische Klinik, Munich

44:817-848 (June 30) 1949. Partial Index

The Electrocardiogram and How to Record It. H. Regelsberger.—p. 817.
Heart Injuries Caused by Lodged Missiles. W. Bunse.—p. 825.
Tuberculosis of Intestine: Beginning Stage. H. Stribrny.—p. 831.
*Treatment of Migraine with Corpus Luteum Hormone. H. Zimmermann.—p. 835.
*Wrecking Work on Bridges as Cause of Severe Lead Poisoning. K. Humperdinck.—p. 841.

Treatment of Migraine.—Zimmermann is concerned with a type of migraine which appears shortly before or after the onset of menstruation and which is refractory to the ordinary therapeutic measures. Some women are troubled with attacks of this type of migraine from menarche to menopause, except that, whenever they are pregnant, they are usually free from them. Another characteristic of these patients is that they are hypersensitive to estrogenic hormone. When their attacks of migraine subside with the onset of the menopause, new attacks may appear when comparatively large doses of estrogenic hormone are given. The author found that administration of the corpus luteum hormone (progesterone) is effective in suppressing attacks of migraine in these women. He cites several histories to illustrate these attacks and their response to progesterone. As regards endocrine therapy, these cases are the exact opposite of the other form of migraine, which responds favorably to the administration of estrogenic hormone and which as a rule appears only after the menopause. Thus it is necessary to differentiate two types of "menstrual" migraine. The form amenable to progesterone therapy is the more frequent of the two.

Wrecking Work and Lead Poisoning.—Humperdinck reports a man, who, while doing wrecking work on a bridge, suddenly experienced pareses in both legs, severe pains in both knees, generalized weakness, mental irritability and anxiety. Although no lead line was visible on the gums, the grayish pallor and certain changes in the blood picture suggested lead poisoning. He had been engaged in cutting bridge iron work by means of a welding torch. The high temperatures of the welding torch vaporized the lead in the paint covering the iron work and produced lead oxide vapors. Removal from the lead exposure and administration of vitamin B and ascorbic acid was followed by considerable improvement. Examination of 2 other men who had done the same type of work in the wrecking of bridges revealed a number of signs of lead poisoning in 1, who had done the work for eight months; the other, who had done the work for four months, showed no changes. Severe types of lead poisoning, in the form of encephalopathy, paralysis and neurasthenia have been observed in men who do similar work in the wrecking of ships.

Nordisk Medicin, Stockholm

41:1019-1054 (June 10) 1949. Partial Index

*Prostatectomy According to Millin. H. F. Harbitz.—p. 1022.
Fibroma and Fibrosis of Uterus. G. Jørgensen and V. Oram.—p. 1024.
Treatment of Abortion. Twenty-One Years' Experience with Same Method. V. Oram.—p. 1027.
Hydatid Mole with Living Child: Report of 2 Cases. F. B. Hartvigsen.—p. 1030.
Cervical Pregnancy. A. H. I. Jakobsen.—p. 1031.
Primary Sinus Thrombosis in Puerperium. G. Kullendorff.—p. 1033.
Osteosynthesis in "Epiphysiolytis Fracture" of Upper End of Humerus. S. Alsén.—p. 1034.

Prostatectomy According to Millin.—Harbitz reports on 24 cases of adenoma and 3 of cancer of the prostate in which patients were treated by Millin's method and examined from one-half to one year after operation. Spinal anesthesia was

used in all instances, and blood transfusion was given systematically during the operation. There were no postoperative deaths. Three patients died later, 2 from heart failure and 1 from ureteral calculus, pyelonephritis and perinephritic abscess. In 1 of the cancer cases total prostatectomy was done, with suprapubic drainage; the patient is well a year later. The second patient has some cystic trouble and the third, with normal voiding but signs of metastases, is being treated with diethylstilbestrol, with good results to date. Of the remaining patients 1 has about 500 cc. of residual urine without any discomfort and 1 is incontinent. No cases of pubic osteitis, obturator neuritis or epididymitis occurred. A no. 16 to 20 catheter has been readily introduced in all cases. Ureterograms made in 16 cases show fairly uniform relations with characteristic cavities of varying size corresponding to the prostatic bed. On the whole the results are considered satisfactory and as good as those with transvesical prostatectomy.

Presse Médicale, Paris

57:611-626 (July 2) 1949

Discussion of Mechanism of Renal Involvement in 2 Cases of Septicemia Due to Clostridium Welchii, Cured with Penicillin. Albeaux-Fernet, Sachs and G. Basset.—p. 611.
*Efficacy of Antidiphtheritic Vaccination. G. Ramon.—p. 612.
*Is Antidiphtheritic Vaccination Effective? R. Rendu.—p. 613.

Efficacy of Antidiphtheritic Vaccination.—According to Ramon, Rendu persists in denying the efficacy of antidiphtheritic vaccination by emphasizing that the only means of demonstrating the efficacy of a vaccine consists in a comparison of the morbidity and the mortality of a group of vaccinated persons with those of a control group of nonvaccinated persons of the same age and within the same environment during the same lapse of time. Ramon reviews statistics published in Great Britain, the United States, Canada and Denmark which comply in every regard with Rendu's postulates. In Scotland during the period 1941 to 1942 there were 17,091 cases of diphtheria with 794 fatalities among nonvaccinated persons as compared to 2,833 cases and 13 deaths among the vaccinated. In Canada during the period January 1943 to December 1945 the morbidity among 100,000 vaccinated children was 1.8, as compared to 136 among the nonvaccinated. There was only 1 fatal case among the vaccinated children as compared to 28 fatal cases among the nonvaccinated. Statistics from Denmark show that 22 per cent of the nonvaccinated persons presented malignant diphtheria, while only 5 per cent of those submitted to an incomplete course of vaccination and 2 per cent of those given a full course of vaccination had malignant diphtheria. There was not a single fatal case in the last group. The efficacy of antidiphtheritic vaccination thus has been demonstrated exactly by the means postulated by Rendu.

Antidiphtheritic Vaccination.—Rendu does not deny that the decline of diphtheria coincided with the vaccination campaign in certain countries, but he emphasizes the fact that this decline often started before vaccination had been carried out, as in the United States and Canada. In France the decline in the morbidity and mortality from diphtheria observed during the period 1945 to 1947 had been as pronounced among the nonvaccinated infants and adults as among the children between the ages of 2 and 14 years for whom vaccination is compulsory according to the law. This is the best proof that the reduced incidence of diphtheria is not due to vaccination. Appreciation of the value of a vaccine should not be based exclusively on the apparent successful results in certain countries but should also be based on the failures reported in other countries, as well as on the success of "nonvaccination." In comparing the statistics of vaccinated and nonvaccinated groups it is highly important that the two groups comprise an equal number of persons of the same age and of the same social environment, exposed to infection during the same period and observed during the same lapse of time. It is likewise important that the control group exclude those in whom vaccination is contraindicated or whose course of vaccination was not completed. If these statistical postulates are taken into account, it becomes evident that antidiphtheritic vaccination has not proved its efficacy.

Semaine des Hôpitaux de Paris

25:2053-2086 (June 30) 1949. **Partial Index**

*Tuberculous Meningitis in Adults Treated with Streptomycin; Two Years' Experience. E. Bernard, B. Kreis, A. Lotte and others.—p. 2053.

Streptomycin in Tuberculous Meningitis.—Bernard and co-workers treated 100 patients, 59 females and 41 males, 98 adults and 2 children, having tuberculous meningitis with streptomycin by combined intraspinal and intramuscular routes. Daily injection of 100,000 units with a total dose of 1 to 1.5 Gm. of the antibiotic in a 2.5 per cent solution for ten to fifteen days by the intraspinal route is recommended as a first course, and this may be repeated if indicated. Intramuscular injections of a 5 per cent dilution of the antibiotic, 1.5 Gm. (1,500,000 units) every twenty-four hours in six divided doses were given for two to eleven months. The concentration of the drug in the cerebrospinal fluid is higher with combined routes of administration than with administration by the intraspinal route alone. Seventy-eight of the 100 patients died and 22 are alive; 17 of the 22 have been followed for more than two years. They are in a state of apparent recovery and without sequelae. Eighteen of the 78 patients died within five days after admission; they were in coma on their admission to the hospital. Sixty-seven patients died within the first six months after admission, 8 within nine months and 3 within twelve months after admission. There is little risk of a fatal outcome after the ninth month. Recurrence was observed in 15 of 32 patients in whom treatment was discontinued deliberately. The treatment was resumed, and 5 of the 15 patients are alive and in a state of apparent recovery, while the remaining 10 patients died. The risk of a recurrence corresponds with the duration of treatment. Recurrences occurred in 14 patients in whom duration of the treatment was less than seven months. The results obtained may be improved provided that the diagnosis is established early and that the technic is improved. Systematic lumbar puncture should be performed in all cases of miliary pulmonary tuberculosis. Meningitis was associated with miliary tuberculosis in 38 of the authors' patients. Control examinations of the cerebrospinal fluid should continue after treatment has been discontinued.

Wiener klinische Wochenschrift, Vienna

61:401-416 (July 1) 1949. **Partial Index**

Treatment of Concussion of Brain. E. Domanig.—p. 401.
Heart and Pregnancy. O. Zimmermann-Meinzingen.—p. 402.
Mortality in 2,000 Goiter Operations (January 1, 1946 to June 24, 1948). H. Kopf.—p. 405.
*Visual Disturbances During or After Streptomycin Therapy of Tuberculous Meningitis. F. Mejer.—p. 407.

Visual Disturbances in Tuberculous Meningitis Treated with Streptomycin.—Mejer reports serious visual disturbances in 8 of 52 children with tuberculous meningitis during or after treatment with streptomycin. A more or less advanced atrophy of the optic nerve was the cause of the visual disturbance in 5 instances. Optochiasmatic arachnoiditis was suggested by the clinical or pathologic signs in 4 of the children, 3 of whom had atrophy of the optic nerve. Temporary sudden blindness occurred in 1 girl aged 5 years and in 1 boy aged 3½ years, but vision was restored to normal several days later. In these 2 cases the visual disturbance was considered as a symptom of acute internal hydrocephalus. These tuberculous changes of the brain may be considered as sequelae of the treatment with streptomycin only as far as the antibiotic delays the formerly more acute course of the disease by changing it into a more subacute or chronic form. Clinical observations in tuberculous meningitis may thus become possible. These were not possible before treatment with streptomycin was practiced. The visual disturbances in the last 2 cases may be the result of a cortical pressure effect.

Book Notices

Principles and Practice of Ophthalmic Surgery. By Edmund B. Spaeth, M.D., Professor of Ophthalmology in the Graduate School of Medicine of the University of Pennsylvania, Philadelphia. Fourth edition. Cloth Price, $15. Pp. 1044, with 1259 illustrations. Lea & Febiger, 600 S. Washington Square, Philadelphia 6, 1948.

The ophthalmologist, plastic surgeon and general surgeon are indebted to Spaeth for his careful and complete revision of his excellent surgery of the eye. The fourth edition contains much new material and many well chosen additional illustrations. The section on ocular muscles and on ptosis brings up to date the surgery of these two important aspects of ophthalmology. There have been many changes in the technic of enucleation since Ruedemann made the plastic implant integrated with the ocular muscles. This important advance in cosmetic ophthalmic surgery is selectively and authoritatively considered. The reproduction of all the illustrations and the appearance of the text are improved over those in the previous editions, and one can hardly see how the publisher's work could be improved on. The author acknowledges the assistance of Cowan in revising the surgical anatomy of the eyeball, and the excellence of this section adds greatly to the value of the volume. It is difficult to select any one part for especial mention, but the discussion of orbital conditions seems to be unusually outstanding. The author's wide experience and thorough knowledge of plastic surgery is evident in many of the chapters. The chapter on radiation therapy is well done, and many important practical points are discussed. Several illustrations in color have been included where they are of particular value, as, for example, in the discussion of retinal separations. The author has adhered to his policy of describing technics exactly as presented by the original authorities and, even though this prevents mistakes, in some instances one wishes that he might have made the description with his preferred changes as dictated by his own wide experience. This work is greatly needed, and the author and publisher have accomplished a monumental work which will aid many persons who have eye difficulties surgically correctible.

Die Lungentuberkulose. Von Prof. Dr. med. H. Gissel und Dr. med. habil. P. G. Schmidt. Second edition by Paul Georg Schmidt. Half-Cloth. Price, $6. Pp. 264, with 158 illustrations. [Grune & Stratton, 381 4th Ave., New York 16]; Georg Thieme, Diemershaldenstrasse 47, Stuttgart-O, 1949.

Gissel and Schmidt present an excellent and modern account of pulmonary tuberculosis. After an eight page historical sketch, the tubercle bacillus is discussed in detail with reference to morphology, staining and culture methods, animal inoculation, virulence, allergy and immunity. After discussing infection with the tubercle bacillus, various phases of pathologic anatomy are presented from the primary focus to the formation of cavity. Such subjects as inheritance, predisposition and constitution are considered as possible factors in the development of tuberculosis.

All phases of complete examination of the patient are concisely presented, such as history with reference to both acute and chronic onset of disease, all the common symptoms, the physical examination, including roentgen observations, and the various methods of administering the tuberculin test. Considerable space is given to blood studies. An excellent section is devoted to differential diagnosis.

Primary tuberculosis as it affects the lung parenchyma, lymph nodes and its sequelae, including acute and chronic forms of clinical tuberculosis and their complications, are adequately presented. Pleurisy in all its forms is discussed. The book contains a good section on extrapulmonary tuberculosis. Fifty-three pages are devoted to treatment. The most modern methods, including all forms of chest surgery and administration of antibiotics, are included. Good discussions are presented on pneumoconiosis, fungus infections, bronchiectasis and lung tumors.

Most of the illustrations are inserted at the end of the volume. Three plates in color show sections of lungs in which various stages of tuberculosis are represented. All but 17 of the illustrations are roentgen reproductions. A good list of references (mainly European authors) is followed by a well prepared index.

A New Theory of Human Evolution. By Sir Arthur Keith. Cloth. Price, $4.75. Pp. 451. Philosophical Library, Inc., 15 E. 40th St., New York 16, 1949.

Among the great scientists who have contributed to man's knowledge of himself the name of Sir Arthur Keith is pre-eminent. Now in his eighty-first year he has completed a book which recapitulates much of the important contributions to our knowledge of evolution. Especially significant is his forecast in the final paragraphs of this present book.

"Artificially created nations have no power of endurance; when exposed to the fierce winds of an evolutionary workaday world they fall to pieces." "I dare not look forward for more than a few centuries; within this limited period I feel confident that nationalism, far from weakening, will grow ever stronger." Nations are giving lip service to the United Nations Organization, but everywhere we find them searching for economic independence and self sufficiency and strengthening the social bonds and services which give unity and solidarity to nations. Everywhere nations become more and more national in thought and in deed. Sir Arthur Keith is convinced that anthropologic weakness will weaken the United Soviet Republics. He believes also that the hormones are important in evolution and that hormones explain the formation of a racial type rather than sexual selection. Sir Arthur Keith writes understandingly and clearly and for all who think that his new theory of evolution, which is a superstructure built on Darwinism, will have great interest.

Psychosocial Development of Children. By Irene M. Josselyn, M.D., Practicing Psychiatrist and Psychoanalyst, Research Associate, Institute for Psychoanalysis, Chicago. Paper. Price, $1.75. Pp. 134. Family Service Association of America, 122 E. 22nd St., New York 10, 1948.

In the great welter of literature on child development, this thoughtful work is refreshing and rewarding reading. The author, a psychoanalytically trained psychiatrist, presents the material of a series of lectures, given over a period of years for the Family Service Association of America. Her point of view is that of the practical-minded clinician, who endeavors to impart to her hearers basic and time-tested information about the emotional development of the child. She succeeds in presenting a broad, sound theoretical background that gives substance and meaning to her clinical perspectives. She is modest, given to understatement rather than expansiveness, with the result that the reader derives a sense of substantial understanding of the child, his environment, his needs and the nature of his growth.

The author has divided her discussion into exposition of age periods. The sense of continuity of the developmental process has nevertheless been maintained. All social workers will find this pamphlet excellent reading, and educators, medical students and all others interested in childhood growth and development will find it useful. The bibliography has been thoughfully selected.

Diagnostic Tests for Infants and Children: Principles, Clinical and Laboratory Procedures, Interpretation. By H. Behrendt, M.D. Cloth. Price, $7.50. Pp. 529, with 45 illustrations. Interscience Publishers, Inc., 215 4th Ave., New York 3; Interscience Publishers, Ltd., 2a Southampton Row, London, W.C.1, 1949.

The need for source material on the principles, technics and interpretation of clinical and laboratory tests commonly employed in pediatrics has been apparent for some time. This material is often widely scattered or appears inadequately covered in general books on clinical laboratory diagnosis. While the compilation of methodologic data pertaining to pediatrics might be considered to be a contribution in itself, the mere collection of methods and technics would have little or no significance apart from the problem for which they are to serve as instruments. The author is apparently aware of this fact, and in general the method of presentation is fairly well conceived. Each chapter deals with specific functions to be tested in a given organ or system. It is obviously difficult to carry out such a plan in an orthodox style, and this plan of organization is not adhered to rigidly. However, certain hematologic tests deserve a better fate than being assigned to a miscellaneous chapter. The author's decision to omit tests of morphologic nature, especially with regard to hematology, permitted him to treat inadequately the function of the blood-forming organs. This is a definite limitation in the over-all usefulness of the

book, and one wonders whether this decision can be justified. As with many first editions there are certain unplanned omissions. In the chapter on the cardiovascular system there is no mention of angiocardiography or cardiac catheterization. In the chapter dealing with gastrointestinal function there is no mention of the simple screening device for the presence of proteolytic enzyme in the stool devised by Schwachman. In spite of these and other minor omissions, as well as lack of simple screening procedures valuable in office practice, there is enough material of value in this book to justify its existence. One might question the space devoted to psychologic testing, since few clinicians or laboratory workers employ such tests and the psychologist is not likely to use a book of this type for that information. The text is well organized and carefully edited. Each chapter is documented with a current and well selected bibliography. The book will have limited use for the general practitioner and practicing pediatrician and will find its greatest usefulness in the hospital and research laboratory.

Mycoses and Practical Mycology: A Handbook for Students and Practitioners. By N. Gohar, M.R.C.S., L.R.C.P., Assistant Professor, Parasitology and Mycology, Department of Clinical Pathology, Kasr el Ainy Faculty of Medicine, Fouad I University, Cairo, Egypt. With a foreword by Sir Philip Manson-Bahr, C.M.G., D.S.O., M.D. Cloth. Price, $6. Pp. 234, with 134 illustrations. Williams & Wilkins Company, Mt. Royal & Guilford Aves., Baltimore 2, 1948.

The author has tried to present a considerable amount of information regarding classification and subdivisions of fungi, the history and geographic distribution of fungous diseases and their clinical features and treatment. It would seem that covering all these subjects in a small textbook would of necessity make it impossible to cover any of them adequately. Unfortunately, this is exactly what has happened.

There are a number of factual details with which one must take issue. It seems unlikely that washerwomen's disease "is probably brought about by the women refraining from the use of soap with its fungistatic alkalinity." On the contrary, most experts in the United States would forbid the use of soap in cases of washerwomen's disease. The administration of quinacrine hydrochloride for epidermophytosis of the hands and feet is, to say the least, not an accepted practice. There is no reason to include erysipeloid and pinta in a book on mycology. Epilation with thallium acetate is outdated because of the dangers involved. The use of pastilles for calibration of x-ray apparatus is not a present day procedure. Important features of practical mycology, such as the appearance of mosaic fungus and its significance, are not mentioned.

This book is not up to the standard of books on the same subject published in the United States, and therefore cannot be recommended.

Maladies du squelette: Syndrome d'Albright; xanthomatose osseuse; granulome éosinophile des os; neurofibromatose osseuse; mélorhéostose; maladie de Milkman; ostéolyse essentielle; myélomes. Par Lucien Leger, R. Ducroquet et Henry Leger. Paper. Price, 1200 francs. Pp. 255, with 129 illustrations. Masson & Cie, 120 Boulevard Saint-Germain, Paris 6e, 1949.

This beautifully published book consists of a series of unrelated short essays on several rare bone disorders which have interested the authors. In spite of its title, there is no attempt to present a comprehensive view of skeletal disease. The subject headings include Albright's syndrome, diseases related to but not identical with that syndrome, solitary xanthomatoses, eosinophilic granuloma, bone lesions of neurofibromatosis, melorrheostosis, Milkman's disease, "essential osteolysis" and multiple myeloma. The sections on disorders related to Albright's syndrome, neurofibromatosis, melorrheostosis and osteolysis are outstanding. Here the authors speak from extensive personal experience, and their well documented presentation is a valuable contribution to the literature on rare bone lesions. There is a profusion of excellently reproduced photographs and roentgenograms, though the pathologic material is unfortunately meager. The other sections offer little new to those fortunate enough to have had access to the recent medical literature in English. They are primarily a detailed review of the literature occasioned by the analysis of one or two cases. They are generally accurate and well illustrated, although here, too, the lack of detailed pathologic observations is felt. It is, for example, this lack which prevents the authors from accepting the identity of Milkman's syndrome with osteomalacia. This book is well worth a place in the library of anyone interested in bone disease.

Childhood & After: Some Essays and Clinical Studies. By Susan Isaacs, C.B.E., M.A., D.Sc. Cloth. Price, $4.50. Pp. 245. International Universities Press, Inc., 227 W. 13th St., New York 11, 1949.

This is a collection of essays and clinical studies, almost all of which have been published previously, between 1928 and 1945. Two or three do not deal directly with children but are included as they contribute to the understanding of the important relationship between childhood mental life and subsequent emotional development. Some of the papers require considerable technical knowledge for understanding, but by and large most can be read by the educator and others interested in child rearing, even without psychiatric training. This is true for such chapters as the one on educational value of the nursery school and the discussion of fatherless children. The more technical papers will be difficult for those not psychoanalytically oriented.

This little volume, in some sections, particularly representative of the views of Melanie, shows the high order of perceptiveness about the mental processes of the child for which the author is widely known. Every serious-minded student of child psychology or of psychotherapy for children should become familiar with the material assembled here. The educator, social worker or pediatrician able to assimilate the content will find himself much enriched thereby.

Physiologie du système nerveux central. Par Georges Morin, professeur de physiologie à la Faculté de médecine d'Aix-Marseille. Paper. Price, 950 francs. Pp. 270, with 69 illustrations. Masson & Cie, 120 Boulevard Saint-Germain, Paris 6e, 1948.

Professor Morin has written this book from the point of view of a physiologist and has made reference to histologic material mainly as a means of further demonstrating the functional relationships which form the main theme of the book. The author has confined himself to subjects which he considers necessary for the understanding of the essential functions of the centers and pathways of the nervous system. This book has been developed from Professor Morin's course for medical students. He refers his readers to a French translation of Fulton's "Physiology of the Nervous System" for the references which he has been forced to omit.

The material presented is a clear exposition of the classic elements with which the medical student must be familiar. The author has attempted to discuss the subjects which he covers with sufficient experimental evidence to show clearly the reasoning leading to the facts that he presents and to show how these concepts were developed. The following titles of the six chapters suggest the scope of this work. I. The Spinal Roots, II. The Spinal Cord, III. Muscular Tone: Its Relation to Balance and to Equilibrium at Rest, IV. The Cerebellum, V. The Cerebral Cortex and VI. the Optic Nucleus. Simple line drawings of the fundamental pathways and a few halftones of animals with typical lesions help to clarify the material for the student.

Clinical Radiation Therapy. By Ira I. Kaplan, M.D., F.A.C.R., Clinical Professor of Radiology, New York University Medical College, New York. Second edition. Cloth. Price, $15. Pp. 844, with 614 illustrations. Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers, 49 E. 33d St., New York 16, 1949.

The second edition of Dr. Kaplan's textbook on radiation therapy contains much of the material of the first edition; some of the chapters have been rearranged and some of the material rewritten. A chapter on "The Legal Aspects of Radiation Therapy" has been added and also some material on radioactive isotopes. The present volume contains almost 300 more pages and 200 more illustrations than its predecessor. Chapter bibliographies show a few deletions and additions; indexes are about the same.

About 80 per cent of the volume is devoted to a discussion of the actual treatment of lesions, the arrangement being on an anatomic or regional basis. The other 20 per cent is devoted to historical material, physics, general considerations, complications and legal aspects.

These latter subjects have been so adequately treated in other books and monographs that it seems unfortunate they have been included again in this edition. Not only has the book been increased in size until it is a little bulky and heavy but the added pages have meant an unnecessarily increased cost.

On the jacket announcement, the publishers state, "No important condition has been omitted, and every discussion includes precise details of the therapy of choice." It is true that in this volume the treatment by irradiation of a considerable number of conditions is discussed. However, the field of radiation therapy has become so extensive it is doubtful that an attempt should be made to cover the entire subject in one volume, especially in one designed to meet the needs of the beginner and the experienced radiologist.

In general the subject matter is well presented and is indicative of the wide clinical experience of the author. However, in many instances "the precise details" consist of the description of several methods, each with dosages of a rather wide range and with other unprecise factors.

Since there is a certain amount of repetition in the book it is felt that condensation would be helpful, especially with more emphasis on (*a*) the importance of accurate preirradiation diagnosis (treatment of uterine fibroids), (*b*) the contraindications of radiation therapy and (*c*) its limitations, especially in the presence of severe infection.

Used with discretion, the book will be of value to students in radiation therapy.

Experimental Surgery, Including Surgical Physiology. By J. Markowitz, M.B.E., M.B., Ph.D., Associate Professor of Physiology, University of Toronto, Toronto, Canada. Second edition. Cloth. Price, $7. Pp. 546, with 330 illustrations. Williams & Wilkins Company, Mt. Royal & Guilford Aves., Baltimore 2, 1949.

For concise evidence of what dog surgery has contributed not only to humanity but to the dog as well, one need only refer to this book. Beautifully prepared, it stands as an indictment of those who continually oppose the advancement of medical science via animal experimentation. Here are descriptions of experiments employed in the solving of such problems as peptic ulcer, peritonitis and congenital heart disease. Most medical students are familiar with some of the aspects of animal experimentation involving gastric physiology, especially since the work of Pavlov. Those who are interested in further study can do no better than begin with this book. The chapter on peritonitis should be familiar to all students and especially to surgeons. This common surgical complication presents problems in physiology which are rarely found in standard surgical textbooks and which are fundamental to a rational approach to the management of peritonitis.

The illustrations are mainly sketches of technics employed and are clear and profuse. The text is readable and interesting. Interspersed with the scientific detail are some choice bits of surgical philosophy. The modern surgeon must be anatomist, pathologist and physiologist. The last-mentioned science is now of equal rank with the first. It behooves and will benefit all surgeons to own and study this book.

The Common Form of Joint Dysfunction: Its Incidence and Treatment. By William Kaufman, Ph.D., M.D. Cloth. Price, $8.75. Pp. 200, with illustrations. E. L. Hildreth & Company, Brattleboro, Vt., 1949.

The author describes a generalized articular condition which he attributes to a slowly progressive metabolic disorder which he treats with nicotinamide. He calls this condition the common form of joint dysfunction referred to by others as the normal aging process. As a basis for his treatment he measured ranges of various joint movement and computed a joint range index for each joint. An index of below 96 per cent of normal in a person indicates joint dysfunction. The author next describes four complicating syndromes frequently existing coincidentally with joint dysfunction. These include trauma, allergic reactions, sodium retention and psychogenic factors. In a separate chapter he coordinates the treatment of joint dysfunction and these four complicating syndromes. A section is devoted to an analysis of clinical data gathered from a series of untreated cases and another group both before and after therapy.

Textbook of Histology. By José F. Nonidez, D.Sc., and William F. Windle, Ph.D., Sc.D., Professor of Anatomy, University of Pennsylvania, Philadelphia. Cloth. Price, $6.75. Pp. 456, with 287 illustrations. McGraw-Hill Book Company, Inc., 330 W. 42d St., New York 18; Aldwych House, Aldwych, London, W.C.2, 1949.

In extending and completing the late Professor Nonidez' manuscript, Professor Windle has achieved a uniformity of level throughout the text, illustrations and references which accomplishes admirably the authors' intent to produce a highly lucid, up-to-date and original book for the beginner in this subject. There are 209 original drawings, made for the purpose by Nonidez, and 193 new photomicrographs, which are generally of excellent and often superior quality. To obtain maximum readability much of the usual detail and all historical and controversial aspects of the subject are eliminated. References are limited to a few selected collateral readings. A bibliography of motion picture films is included.

The book is well suited to many undergraduate courses in human histology. For the medical curriculum there are several aspects which some instructors will consider to be oversimplified.

Demonstrations of Physical Signs in Clinical Surgery. By Hamilton Bailey, F.R.C.S., F.A.C.S., F.I.C.S., Surgeon, and Surgeon-in-charge of Genito-urinary Department, Royal Northern Hospital, London. Eleventh edition. Cloth. Price, $9. Pp. 436, with 657 illustrations. Williams & Wilkins Company, Mt. Royal & Guilford Aves., Baltimore 2, 1949.

"Clinical diagnosis is an art, and the mastery of an art has no end; you can always be a better diagnostician." With this quotation from Logan Clendening, Hamilton Bailey ends the eleventh edition of his book. It explains why he has felt the necessity of revising it so often in the past twenty-two years. The changes are considerable in this edition. The book has increased about 25 per cent in size. There are many new illustrations, but most of the old favorites are still present. Some have been retouched and diagrammatically improved. Newly emphasized diagnostic pointers, such as Homan's signs for phlebothrombosis, make their initial appearance. Always the aim is to make the surgeon a better diagnostician. The improvement of the surgeon as a clinician once would have been regarded with amusement. However, the advent of modern laboratory technic has tended to impress some residents in surgery with its superior diagnostic capability. As a result, examination of the patient may be superficial and hurried, to make way for the chemical and cytologic examinations of the blood and the ubiquitous roentgenogram. No one discounts the value of these, but there is nothing that soothes the tormented soul of the surgeon more than making an accurate preoperative diagnosis in spite of contrary or "negative" laboratory findings. This brief volume will guide the tyro in surgery more surely to this pleasant goal.

The Kinesiology of Corrective Exercise. By Gertrude Hawley, M.A. Second edition. Cloth. Price, $3.75. Pp. 192, with 107 illustrations. Lea & Febiger, 600 S. Washington Sq., Philadelphia 6, 1949.

As the author states in the preface, the purpose of this book is to provide a practical text in kinesiology for the use of students, teachers and physical therapists specializing in the field of corrective exercise. She gives an analysis of movements of the various regions of the body with special reference to the more frequently used therapeutic exercises. This reviewer was especially gratified by the stress on unilateral exercises in the treatment of functional scoliosis. While still controversial, this approach seems to be gaining more and more ground.

Topographical Anatomy of the Dog. By O. Charnock Bradley, M.D., D.Sc., F.R.C.V.S. Revised by Tom Grahame, T.D., F.R.C.V.S., Professor of Anatomy, Royal (Dick) Veterinary College, Edinburgh. Fifth edition. Cloth. Price, $7. Pp. 319, with 129 illustrations. The Macmillan Company, 60 Fifth Ave., New York 11; Oliver and Boyd, Ltd., Tweeddale Court, 14 High St., Edinburgh 1; 98 Great Russell St., London, W.C.1, 1948.

This is an excellent book, with detailed descriptions of dissections nicely illustrated by line drawings, some colored, photographs and many radiographs of bones, organs and cavities. It should be a valuable guide for the student in comparative anatomy and also an indispensable reference for the physiologist.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

VITAMIN A AND NIGHT BLINDNESS

To the Editor:—**What is the prevailing thought on the value of vitamin A for patients who have night blindness with normal ocular fundi and no demonstrable systemic disease?** W. J. Holmes, M.D., Honolulu, Hawaii.

ANSWER.—The association of vitamin A deficiency with night blindness and the defective regeneration of visual purple is generally recognized. According to Wald, visual purple is converted by the action of light to visual yellow, which may be retinene; this action is reversible in the dark to some extent, but a part of the visual yellow is converted to vitamin A, which can be reconverted to visual purple as long as the retina is in contact with the pigment epithelium. If the retina fails to keep pace with this resynthesis of visual purple from vitamin A, quantities of the latter will be lost to the general circulation, and thus the effect of vitamin A deficiency must extend to the visual cycle. Night blindness is the result of improper handling of vitamin A by the retina rather than a lack of vitamin A in the usual diet. The addition of large amounts of vitamin A to the diet in persons suffering with night blindness with normal ocular fundi is a sound practice based on clinical as well as laboratory data and is generally accepted as a logical form of treatment. Favorable results are not always demonstrable, and the vitamin A treatment may as well be abandoned if immediate improvement in symptoms is not obtained.

HOME HEATING AND ASTHMA

To the Editor:—**What is the best type of home heating for an asthmatic person? Is radiant heating preferable to forced hot air heating for an asthmatic person?** M.D., Illinois.

ANSWER.—In comparing the two types of heating for an asthmatic person, one should know the kind of asthma with which one is dealing. Radiant heating equalizes the temperatures in different parts of the room and thus minimizes the changes of draft which is so often deleterious to asthmatic patients. Forced air heating is inclined to create an unevenness of temperature, in addition to increased air motion which circulates dust, pollen and mold particles in the air. Thus, it may be particularly bad for those who are allergic to these airborne allergens. On the other hand, forced air heating lends itself more readily to arrangements for modifying humidity, which may be highly desirable for some asthmatic persons. One can also add filtration to forced air heating, which is not possible with the radiant heat.

SULFAMETHAZINE

To the Editor:—**Is sulfamethazine as used in cremetrex-A® and trigocine® an effective bacteriostatic agent, and what is its toxicity relative to other sulfonamide drugs?** Hugh W. Powers Jr., M.D., Dallas, Texas.

ANSWER.—Sulfamethazine is a sulfonamide compound which is one of the pyrimidine derivatives of sulfanilamide. In this respect it is similar to sulfadiazine, sulfamerazine and sulfapyrazine. It has been widely used in Great Britain and in the British Commonwealth of Nations and is as effective a bacteriostatic agent as are the three diazines which have just been mentioned. Its toxicity is comparable to that of sulfadiazine or sulfamerazine, that is, it is much less toxic than sulfathiazole or sulfanilamide.

GLUCURONIC ACID

To the Editor:—**Has work been done with glucuronic acid to relieve the neuropathies of diabetes? If so, is the preparation available and what results have been reported?** W. Allen Campbell, M.D., Lincoln, Neb.

ANSWER.—Although the relation of glucuronic acid to carbohydrate metabolism has been the subject of considerable study (Quick, A. J.: *J. Biol. Chem.* **70**:397, 1926; **70**:59, 1926; **88**: 537, 1932), no reference has been found in the literature regarding the use of this substance in the neuropathies of diabetes.

DIABETES AND PROSTATIC CANCER

To the Editor:—**(1) Is testosterone contraindicated in diabetes? (2) When cancer of prostate is noted after suprapubic prostatectomy, by pathologic examination, what is the best course to follow: (a) Diethylstilbestrol, 5 mg. daily—when should one begin? (b) Bilateral orchidectomy after prostatectomy (how long) or when symptoms appear indicating secondary growth? (c) Do massive doses of estrogen nullify the effect of androgen originating in the adrenals? (d) Can you suggest an office method for determination of estrogens and of 17-ketosteroids?** M.D., California.

ANSWER.—(1) Testosterone may be used in diabetic as in nondiabetic persons with due regard for dosage, age and sex of the patient and other considerations. Diabetes offers no specific contraindication.

(2) If, on rectal examination, there is no evidence that cancer has extended beyond the limits of the prostate gland, if there are no demonstrable metastases in the bones of the lumbar part of the spine or the pelvis or in the chest by a roentgenogram, and if the patient's general condition and age are such that one may expect reasonable length of life, many surgeons urge radical perineal prostatectomy in spite of the previous operation.

When the lesion is considered to have extended beyond the confines of the prostate, when metastases are present or when the condition of the patient is such that a palliative procedure is deemed necessary, many surgeons consider it best to carry out bilateral orchiectomy immediately. Although others have advised orchiectomy only for those patients wholly intolerant of estrogens and those in whom estrogens have not been effective, removal of the testes will preclude any possibility of androgen stimulation of the carcinoma from this source. Because androgens may be formed by the adrenals, it is reasonable to begin the administration of diethylstilbestrol or other estrogens as soon as the diagnosis of carcinoma of the prostate is made, regardless of whether orchiectomy is carried out or not. The dose of diethylstilbestrol may range from 1 to 15 mg. by mouth daily and is to some extent dependent on the response to the drug as evidenced by tenderness of the nipples or enlargement of the breasts.

There is no simple procedure for the determination of 17-ketosteroids or estrogens which can be used in the usual office laboratory.

SKIN TESTING FOR TUBERCULOSIS

To the Editor:—**What strength material is recommended for routine skin testing with tuberculin? Is there any advantage to the use of purified protein derivatives of tuberculin over old tuberculin? Is it necessary to use different dilutions on different occasions or would one test with an optimal dilution be satisfactory? Of what use is the tuberculin patch test?** M.D., Illinois.

ANSWER.—One-tenth milligram of old tuberculin or 0.00002 mg. of purified protein derivative may be administered as the initial dose. If a reaction is not observed in seventy-two to ninety-six hours, 1.0 mg. of old tuberculin or 0.005 mg. of purified protein derivative is administered as the second dose. If a reaction does not occur within seventy-two to ninety-six hours, tuberculosis probably does not exist unless it was so recently acquired that the person is in the pre-allergic stage or the disease is so acute or advanced that allergic manifestations have waned.

This procedure requires three visits for those who do not react to the first dose. It also increases almost twofold the time of the physician and his staff in most parts of this country where the incidence of tuberculin reactors has become so low that many must have the second test dose. For these and other reasons, the desirability of a single test dose of tuberculin has frequently been expressed. A number of persons have used various intermediate doses and used only one test, such as with 0.5 mg. of old tuberculin or 0.0001 mg. of purified protein derivative.

Whether this procedure is biologically sound has been questioned, because sensitivity to tuberculin reaches a high level three to seven weeks after the first invasion with tubercle bacilli occurs, maintains this high level over a period of months to a few years and then begins to wane if endogenous or exogenous reinfection does not occur. In time, the sensitivity may decrease to such a low level that a response is not elicited by the first test dose of tuberculin. It then may continue to wane until it is not elicited by an intermediate dose and, finally, by the usual second test dose. In fact, if all tubercle bacilli die in the body, signs of sensitivity disappear and tuberculin will not result in a reaction.

When tests are being administered to children or young adults, the usual first test dose or certainly an intermediate dose is almost always adequate. This is also true of relatively recent infections at any age. Apparently reinfections from endogenous

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or exogenous sources "whip up" sensitivity and maintain it at such a high level that it can be detected by the usual first test dose of tuberculin. An intermediate dose does not cause harm and probably detects all persons who have relatively recent infections or who are being reinfected from time to time.

Some wrongly fear the tuberculin test because of the possibility of harmful reaction. The present first or intermediate dose does not offer likelihood of reactivating or aggravating tuberculous lesions which may be present, although a severe reaction may appear at the site of administration of tuberculin. In fact, in areas where the incidence is low, physicians use 1.0 mg. of tuberculin as the first and only test dose.

Patients with long-standing lesions, particularly those who are elderly, may not respond to an intermediate test dose. Therefore, physicians must not be deceived when demonstrable lesions are present and tuberculosis is suspected if there is not a reaction to 1 mg. of tuberculin. The dose should be increased to 2 mg. and subsequently as high as 5 and even 10 mg. A characteristic reaction consisting of edema or induration, or both, 5 mm. or more in diameter must be present. Areas of discoloration of the skin are not positive tuberculin reactions.

There is not any advantage to using purified protein derivative instead of old tuberculin, provided the old tuberculin is properly prepared. The latter agent has been criticized in the past because different batches of tuberculin, although made in the same laboratory, were not of equal strength. Therefore, the proper potency of old tuberculin should be guaranteed by the manufacturer. There is a movement to induce all physicians to use purified protein derivative so that reports of tuberculin testing will be based on the same substance and therefore possibly more comparable. Nevertheless, purified protein derivative is less convenient to use and is more expensive than old tuberculin.

The patch test is advocated to avoid the use of a needle. Apparently it is as efficacious as 0.1 mg. of old tuberculin by injection. However, if one desires an intermediate or a larger dose, the test must be completed by the intracutaneous method.

LOW BASAL METABOLIC RATE

To the Editor:—A man aged 43 years without signs of myxedema was found to have a basal metabolic rate of —29 per cent some years ago. He received a daily dose of thyroid extract, and gained about 10 pounds (4.5 Kg.) in the last two years. His weight is now 182 pounds (82.6 Kg.) and his height 5 feet 7 inches (170 cm.). A recent determination of the basal metabolic rate while the patient was receiving this medicament was —13 per cent. The blood cholesterol level was 440 mg. per hundred cubic centimeters. Is an increase in the dosage of thyroid extract indicated on the basis of this cholesterol level? There have never been any symptoms of thyrotoxicosis with the aforementioned dose. Is any dietary approach feasible to reduce the hypercholesteremia? If so, what foods should be omitted?
Allan Rose, M.D., New York.

ANSWER.—When the basal metablic rate is actually less than —20 per cent symptoms are usually evident, although they may not be characteristic of myxedema. The skin may not be rough or thickened, the hair may not be brittle or scant, the voice may not be hoarse and mental activities may not be impaired, but in hypothyroidism of even short duration and moderate degree there is usually fatigue, slow pulse, and sensitivity to cold. Often, but not always, a tendency to gain weight easily has been observed. Since in the case described the basal metabolic rate is still low and the blood cholesterol level is elevated, an increase in the dose of desiccated thyroid might be tried. The basal metabolic rate and blood cholesterol level should be checked three or four weeks after the dose is increased. Usually 2 or 3 grains (0.13 or 0.19 Gm.) of thyroid daily is sufficient to restore the metabolic rate to normal even in the severest degrees of hypothyroidism.

The persistently elevated blood cholesterol level in this case, still present after the basal metabolic rate has been brought nearly to normal, and too high in proportion to the now only slightly depressed metabolic rate, suggests that another cause must be sought. Presumably diabetes, nephrosis, aplastic or hemolytic anemia, leukemia, biliary obstruction and glycogen storage disease (any of which may be associated with high blood cholesterol levels) have been ruled out. Under programs of severe carbohydrate restriction the blood cholesterol level may become elevated (strict weight reduction; ketogenic diet). Some of the lipoidoses are compatible with good general health, and in some of these there appears to be a defect in the ability to metabolize animal fats. In such instances restriction of foods high in animal fats may be of advantage.

TOXIC REACTIONS FROM PLASTICS

To the Editor:—What are the possibilities of the development of toxic reactions from the use of plastics containing polyvinyl butyral resins if these substances were used in bandages or as part of dentures? Two of the plastics are made by the Bakelite Corporation and are designated vonyl butyral resins XYHL and XYSG. Another is butvar resin, type B 72, made by the Monsanto Chemical Company.
Cloice Biggins, M.D., Loma Linda, Calif.

ANSWER.—Plastics in general have acquired a reputation for causing frequent primary or allergic dermatitis together with other allergic states or systemic diseases. Better examination of the exposure circumstances nearly always discloses that injury arises chiefly in the primary or secondary manufacture of plastics or plastic objects. In powder or liquid form or when heated, some plastic materials are ready sources of injury. Ancillary substances, such as some plasticizers or solvents, have contributed to toxicity. However, when polymerization has been completed, little damage may be anticipated. This is attested by the widespread use of such plastic articles as spectacle frames, belts, suspenders, garments, artificial eyes and plastic food utensils. In brief, injury from plastics is mainly occupational. All the specified plastics may fall into the same category of polyvinyl butyral resins. There is some reason to believe that plastics XYSG and XYHL when applied to human beings in patch tests will elicit sensitizing reactions with a frequency of about 3 per cent. In that light, consideration should be given to articles coming in contact with the human body. In addition, caution should be exercised with respect to plasticizers, stabilizers, hardeners and, remotely, coloring agents.

PENICILLIN REACTION

To the Editor:—I have been using procaine penicillin with 2 per cent aluminum monostearate in peanut oil in my pediatric practice. The only adverse reaction which I have commonly encountered is swelling, redness and induration at the site of the intramuscular injection about a week after the injection. I have not seen this reaction with other types of penicillin. Is this reaction attributed to procaine penicillin, to aluminum monostearate or to peanut oil? Is it an allergic or inflammatory reaction? Is any treatment recommended?
M.D., Rhode Island.

ANSWER.—The reaction, observed frequently after injection of procaine penicillin in oil with aluminum monostearate, is due to retention at the site of injection of the oil and aluminum monostearate in the form of cysts. Some induration and muscle damage surrounds the encysted deposit. Nelson, Price and Welch (*J. Am. Pharm. A.* 38:237, 1949) have studied the reaction in animals and found that in seven to fourteen days following injection of 1 cc. of this preparation into the muscles of rabbits there was an area of muscle damage averaging about 2.5 by 0.5 by 0.5 cm. A number of cystic spaces averaging 1 mm. or less in diameter and filled with fluid or semifluid, colorless or creamy white, oily material were observed. Treatment should be directed toward hastening absorption of the oily material and reducing inflammation. Local heat and massage may be helpful; incision and drainage are rarely indicated.

PREVALENCE OF PULMONARY TUBERCULOSIS

To the Editor:—What percentage of the general population has active or arrested pulmonary tuberculosis? What percentage of the general population shows evidence by roentgenologic examination of active or arrested pulmonary tuberculosis?
M.D., Wyoming.

ANSWER.—The percentage of the general population with pulmonary tuberculosis varies from area to area. The idea that everyone who lives to middle age or longer becomes infected is obsolete in most parts, if not all, of the United States. In some areas in this country twenty-five per cent or less of the entire population have tuberculous infections. In such areas not more than three to eight per cent are infected at the age of eighteen years, and among grade school children the incidence of infection is from nothing to three per cent.

In some other countries infection is practically universal among those beyond twenty years of age. The incidence of tuberculous infection cannot be estimated in any population group. This can be determined accurately only by administration of the tuberculin test. When the incidence is determined, one is handicapped by not knowing with certainty how many of the reactors have had or will have clinical tuberculosis, as a large group of tuberculin reactors has not been kept under close observation until all have died. However, some groups have been followed sufficiently long to permit establishment of morbidity and mortality graphs over a period of two or three decades. If these graphs are projected through the normal

expectancy of life, the percentage of tuberculin reactors in whom clinical tuberculosis will develop will be from twenty-five to thirty-three. This is not an accurate determination because of lack of knowledge of whether the morbidity and mortality rates observed to date will remain constant through the later decades of life.

In parts of this country where nearly everyone became infected with tuberculosis a few decades ago, and in other countries where apparently almost everyone is now infected, one fourth to one third of deaths from all causes are the result of tuberculosis. This suggests that in such places twenty-five to thirty-three per cent of persons infected with tubercle bacilli die from this disease. It has long been known that many persons who have clinical tuberculosis overcome it, often without being aware of its presence. Thus, the number of persons who contract the disease is larger than the number who die from it.

The percentage of the general population that can be expected to show roentgenologic evidence of active or arrested pulmonary tuberculosis cannot be determined, because tuberculosis cannot be diagnosed with accuracy from roentgenograms alone.

In the earlier years of mass surveys by means of roentgenograms of the chest many interpreters regarded practically every shadow as indicative of a tuberculous lesion. Moreover, many interpreters attempted to determine whether lesions which they said were tuberculous were active or arrested. This resulted in the reporting of a tremendous number of persons as tuberculous who did not have this disease. Therefore erroneous conclusions were drawn with reference to the finding of new cases of tuberculosis. The percentage of the population with lesions casting roentgenologic shadows of various kinds varies with locality. Parenchymal lesions other than those which have calcified also vary greatly as to locality, depending on the incidence of mild forms of pneumonia, fungous diseases and the like at the place and time when the roentgen inspections are made.

In most mass roentgenologic surveys of chests of adults, from 1 to 1.5 per cent have shown shadows of lesions thought to be of some significance. Wherever persons with such shadows have really been examined for the determination of the cause of their disease, the percentage found to have active tuberculosis has seldom exceeded 0.5 per cent and usually has been much lower.

BOVINE TUBERCULOSIS OF CERVICAL GLANDS

To the *Editor*:—I have a patient with bovine tuberculosis of the cervical glands of the neck overlying the right sternomastoid muscle. This patient has been treated for thirty days with dihydrostreptomycin (1 Gm. per day). About two weeks after treatment began, one of the two large masses was opened by surgical incision. Would it be advisable to continue this treatment?

M.D., Kentucky.

ANSWER. — It would probably be advisable to continue the dihydrostreptomycin therapy for at least another thirty days. In the meantime, test a culture of the bacilli (if any can be grown) for resistance.

At the end of sixty days, the lesions should show a tendency to heal or be well on the way to healing. If healing has not taken place, the bacilli are probably resistant, as the culture should show. In that event, other treatment should be tried, such as para-aminosalicylic acid.

CHRONIC CYSTIC MASTITIS

To the *Editor*:—During the past three years a 32 year old woman has had three large nodules removed from the same breast, and each time the pathologic report has indicated "chronic cystic mastitis, with no evidence of malignancy." Another large cyst has been found in the same breast and is painful. One surgeon has advised simple removal of the cyst; another surgeon has advised simple mastectomy. In view of frequent recurrence of cysts and the constant fear of cancer on the part of the patient, what is the proper procedure?

M.D., North Carolina.

ANSWER.—Before resorting to mastectomy, which is a major procedure for a woman of 32 years of age because of the cosmetic and psychic effect, one is obligated to try every other method of treatment available without increasing the risk to the patient. Although carcinoma is slightly more frequent in breasts harboring chronic cystic mastitis, this is not of sufficient frequency to sacrifice the breast without attempting less drastic measures.

This patient should be restricted as to her sodium chloride intake. Her fluid intake should also be limited, and she should be given ammonium chloride, 1 Gm. four times daily for four to five days in succession with a rest period of two or three days, after which the administration of ammonium chloride should be resumed in the same dosage. This treatment not only relieves premenstrual tension in the breast but frequently prevents recurrence of cystic mastitis. Testosterone propionate, 10 mg. daily during the first half of the menstrual cycle, has also been advocated by some to accomplish the same results. If these measures fail, roentgen irradiation, 400 r, to the breast tissue will be of value in some instances. If such treatment has not been tried, its use at present would be indicated, with removal of the present cyst in the hope of preventing further cystic disease. If all of this fails and the breast is extensively invaded by cystic disease, mastectomy would then be the last resort.

RECURRENT LYMPHANGITIS

To the *Editor*:—A 52 year old man has recurrent attacks in the following manner: During the first hour there is pain and tenderness in the right inguinal region with pain radiating downward into the leg. This is followed by chills and temperature of 102 to 103 F. Within three hours the right second toe swells to about twice its regular size. The skin of the toe is bright red, and red streaks extending to the foot indicate lymphangitis. The toe itself is neither painful nor tender. The patient had one such attack during alternate summers from 1940 to 1948 and in 1949. Symptoms disappear within four days with treatment with sulfonamide drugs and in one day with penicillin. Between attacks no abnormalities are present. A roentgenogram of the toe was normal. I would appreciate suggestions as to the diagnosis and prevention of recurrence.

M.D., Salem, Ill.

ANSWER. — The lesion described is recurrent lymphangitis, usually caused by a Streptococcus, although other organisms may be present. Between attacks the organisms are latent in the tissues and are activated by other infections, by trauma or often without obvious cause. If the attacks are frequent, permanent lymphedema may develop. A bacterial allergy is said to play a role, and efforts to desensitize the patient by autogenous vaccine have been tried but have frequently failed. Chances of recovering the organism from the blood stream or from regional lymph nodes are fair during or shortly after the chill but are minimal between attacks.

A fungous infection of the feet is most often the port of entry for the secondary invader; in women, infection with Trichomonas vaginalis may pave the way for the offending organism. Thorough eradication of all fungi, intensive penicillin therapy during the acute attack and desensitization to the organism, if found on blood culture, are the usual methods of therapy. None of them are protective against future attacks, but often the attacks spontaneously recur at longer intervals and the disease "burns itself out," which is a popular expression for autoimmunization. If edema persists, continuous elastic compression prevents induration and elephantiasis.

EOSINOPHILIA

To the *Editor*:—Is there any new information on eosinophilia? I am finding a great percentage of high eosinophil counts.

Don A. Gerrish, M.D., Terre Haute, Ind.

ANSWER.—In general, eosinophilia is not present unless the eosinophil count is greater than 6 per cent or the total number of eosinophils is more than 600 per cubic millimeter. A number of disorders may produce mild eosinophilia. These disorders are practically all allergic or parasitic or consist of involvement of the bone marrow. If the eosinophil determination is greater than 20 per cent, the diagnostic field is somewhat restricted. Trichinosis or arsenic poisoning are most commonly associated with such high percentages, but eosinophilic leukemia, periarteritis nodosa or lymphosarcoma may show such percentages. An eosinophilia of less than 20 per cent may indicate any one of a great number of parasitic infestations, allergic states or even bone marrow involvement.

RELIEF FROM HEADACHE

To the *Editor*:—What is the explanation of the relief from headache obtained by some patients by chiropractic adjustments?

Milton I. Stechler, M.D., Los Angeles.

ANSWER.—A few headaches may be due to sustained contraction of the muscles of the scalp and neck. The application of heat and massage may tend to produce temporary or even permanent relief. Experimental data clearly indicate that the mechanism of the pain is due to sustained muscle contraction. Cervical arthritis per se usually does not cause headache.

It is erroneous to assume that relief of headache following chiropractic treatment is due to realignment of supposedly misplaced cervical vertebrae. The psychic factor in headaches must invariably be considered.